

FIG. 4

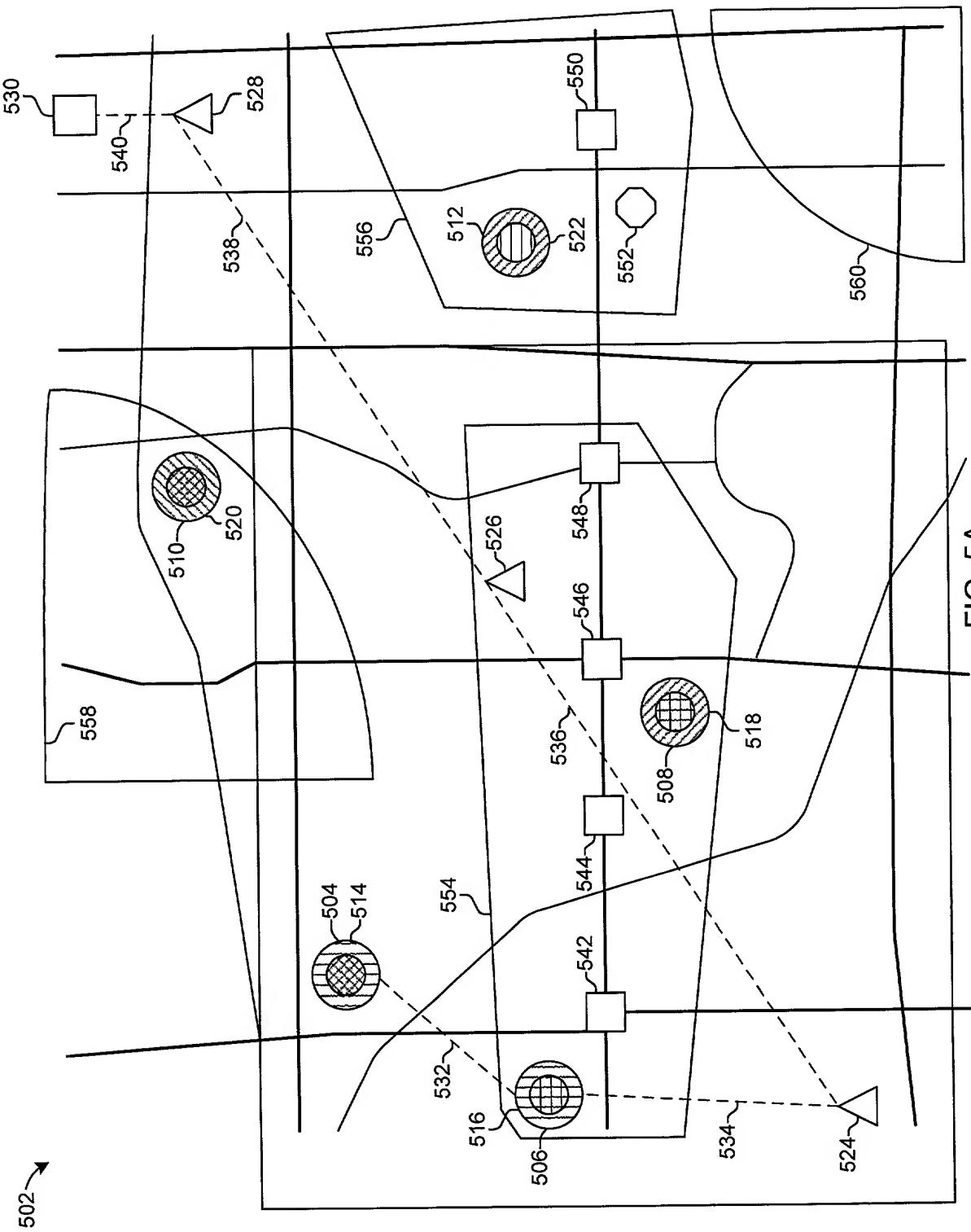
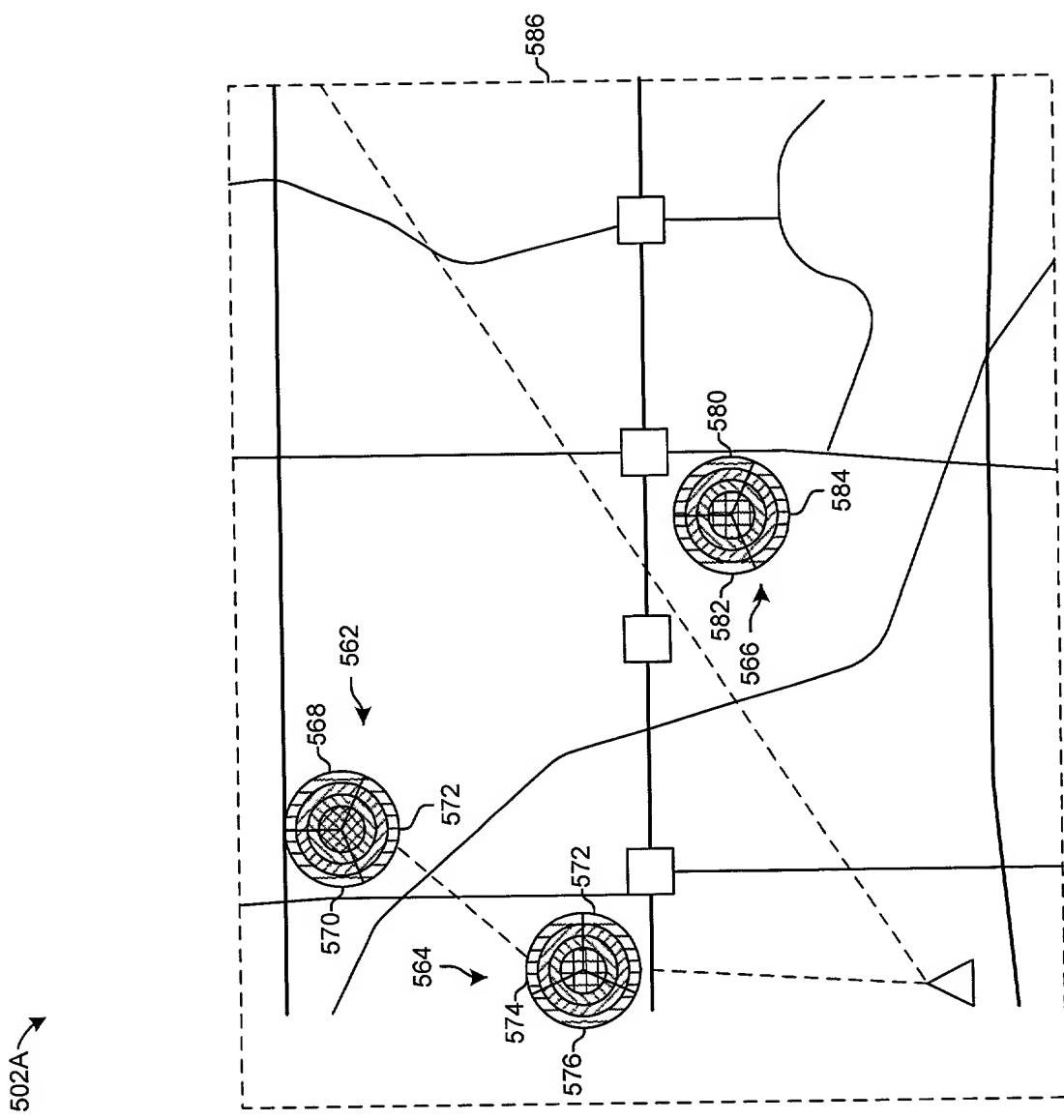


FIG. 5B



502A →

FIG. 5C

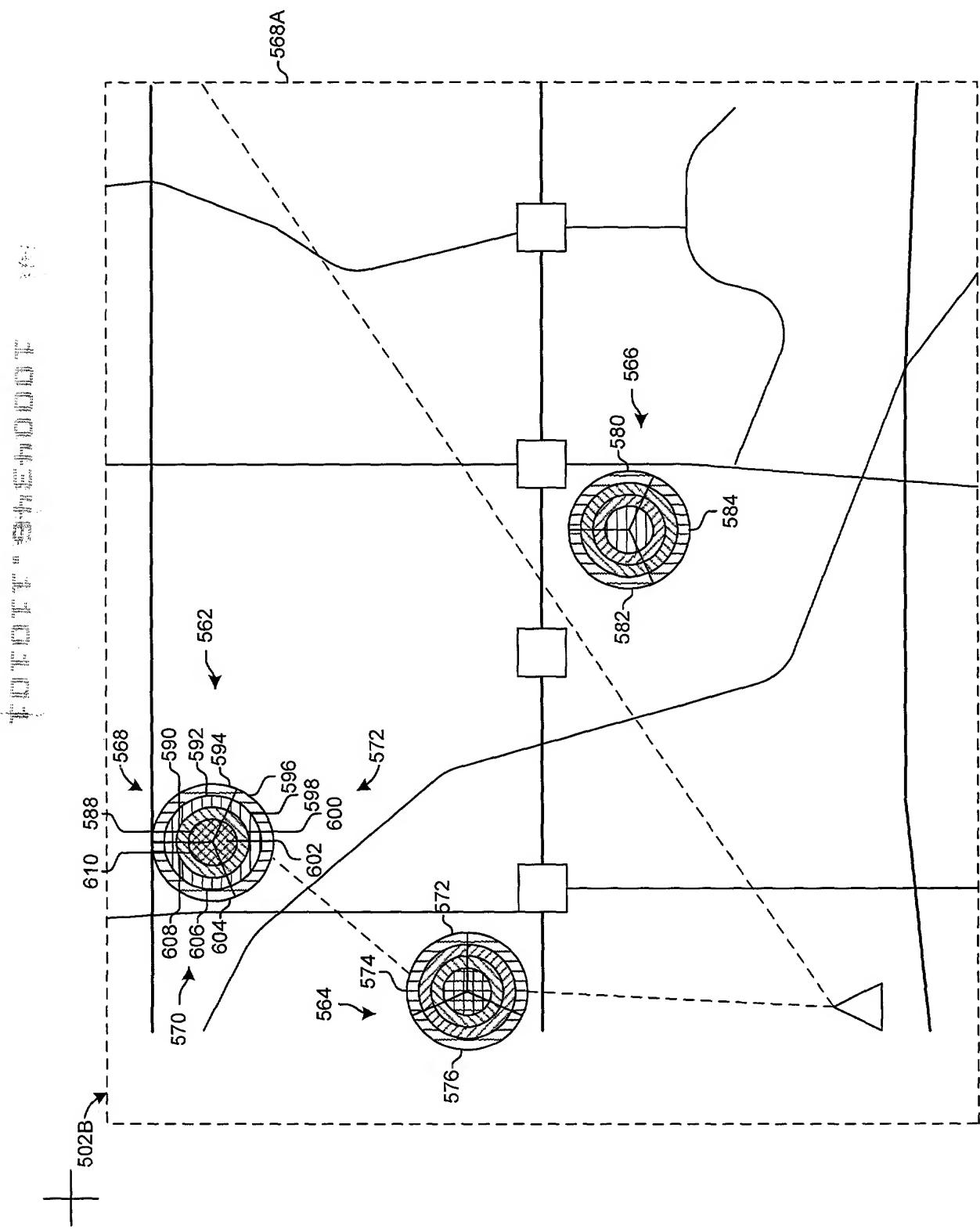
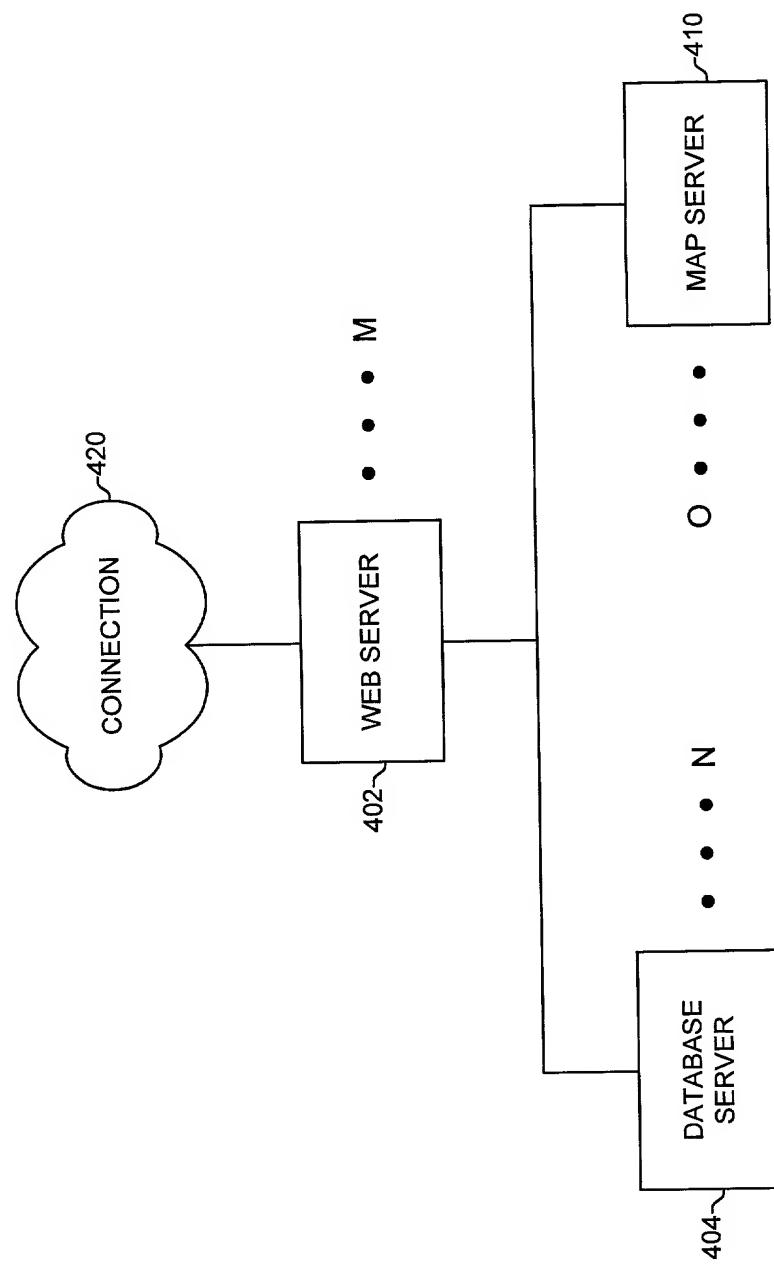


FIG. 6



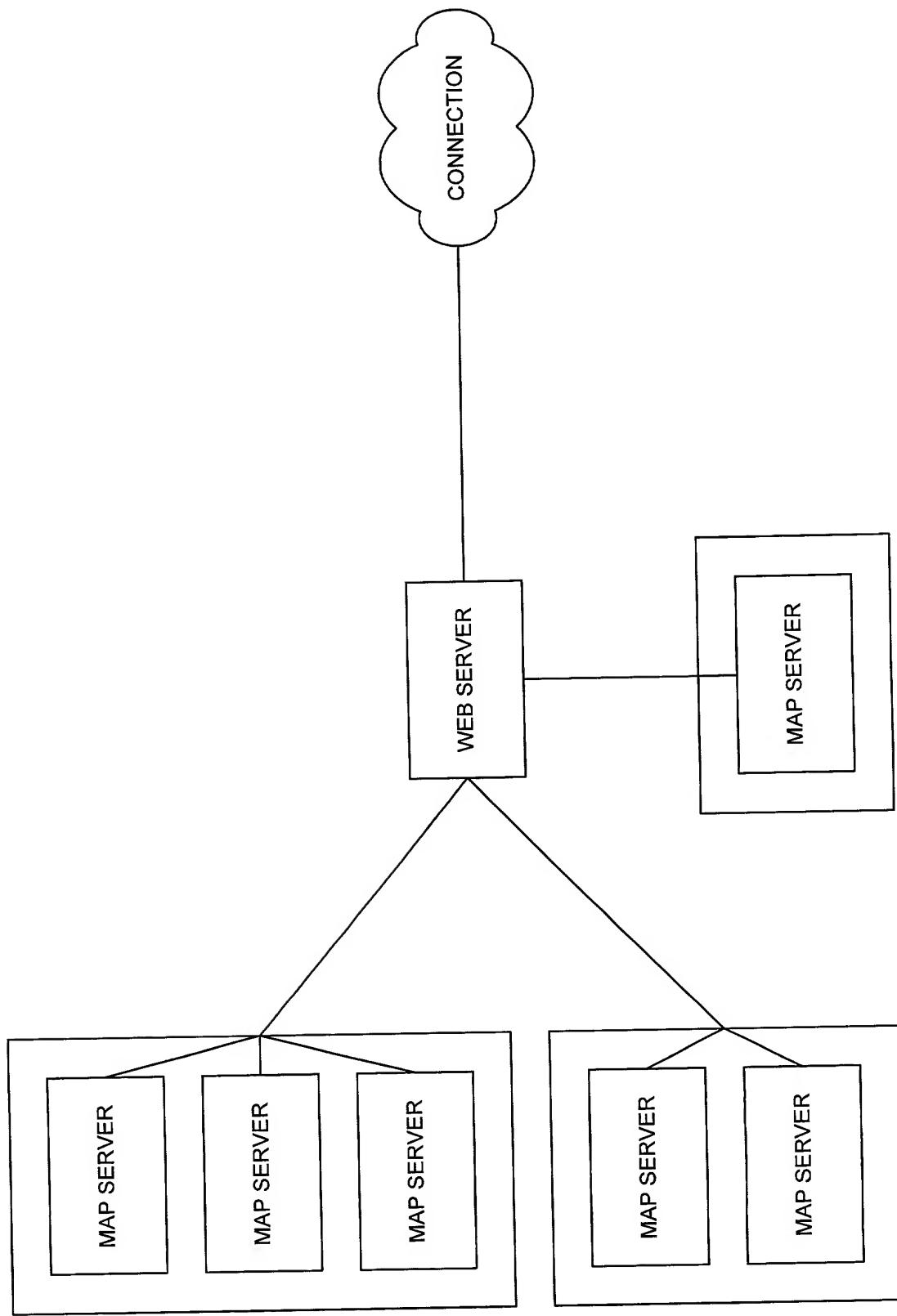
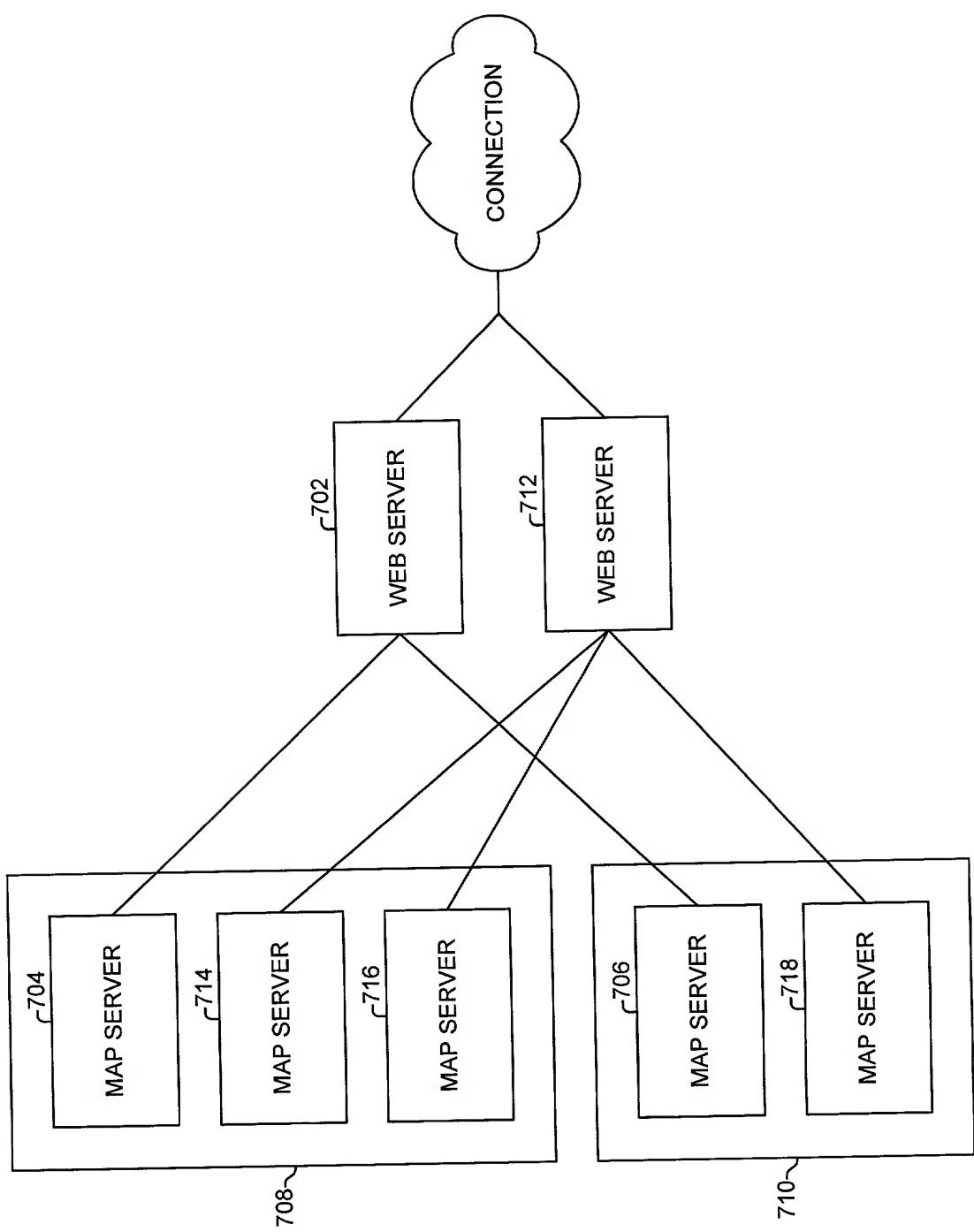


FIG. 7A

FIG. 7B



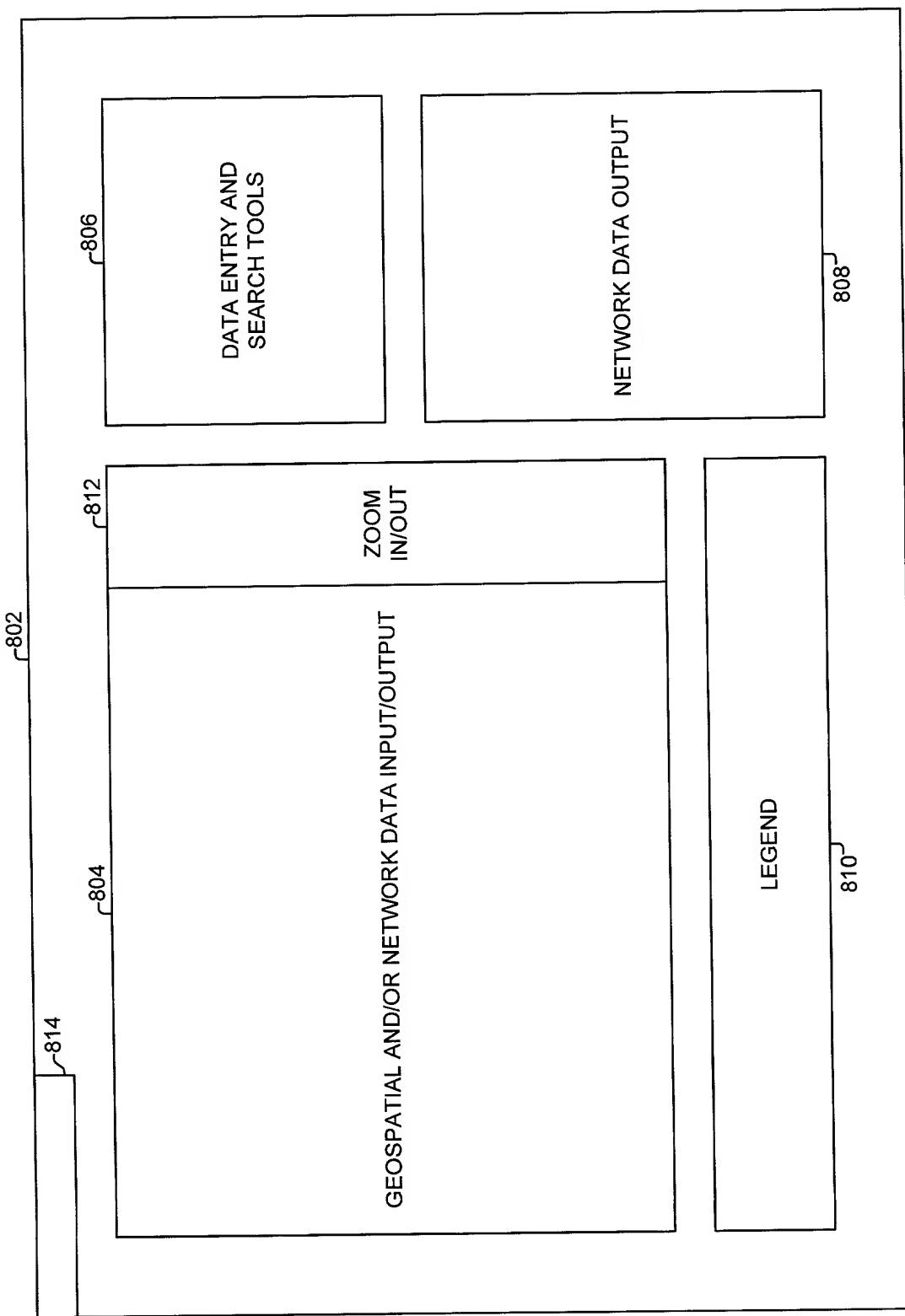


FIG. 8

<p>Geographical Network Management</p> <p>Map Information and Messages Menu</p> <p>910</p>	<p>Address & Intersection Search</p> <p>Address: <input type="text"/> MTA Files ~912</p> <p>Address: <input type="text"/> City: <input type="text"/></p> <p>State: <input checked="" type="checkbox"/> ZIP Code: <input type="text"/></p> <p>Display Map</p> <p>906</p>	<p>Cells SiteInfo Tickets TicketInfo Network ~914</p> <p>No information has been entered.</p> <p>908</p>	<p>904</p>
---------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------	------------

FIG. 9

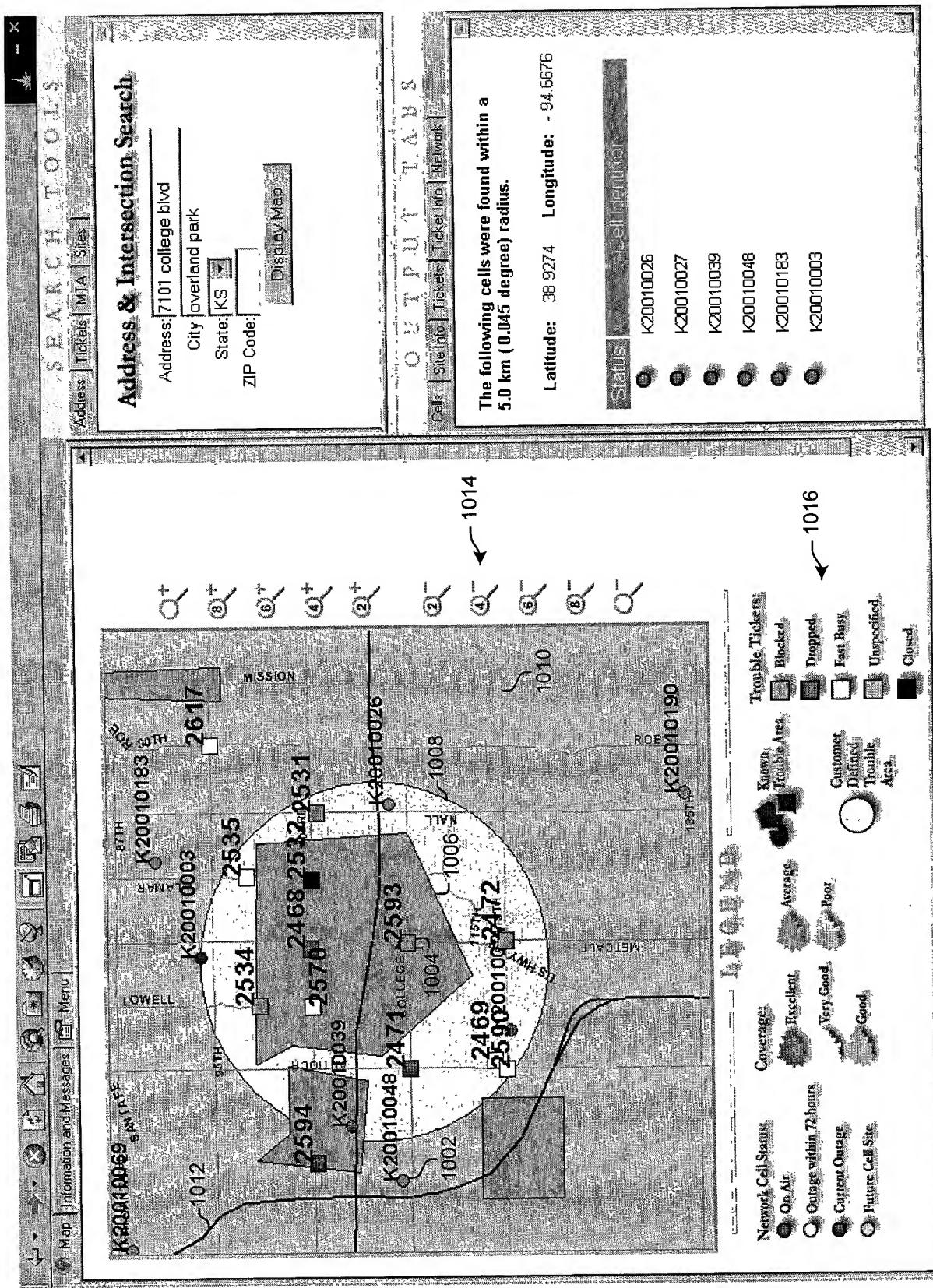


FIG. 10

TOOT TOOT at Service Center

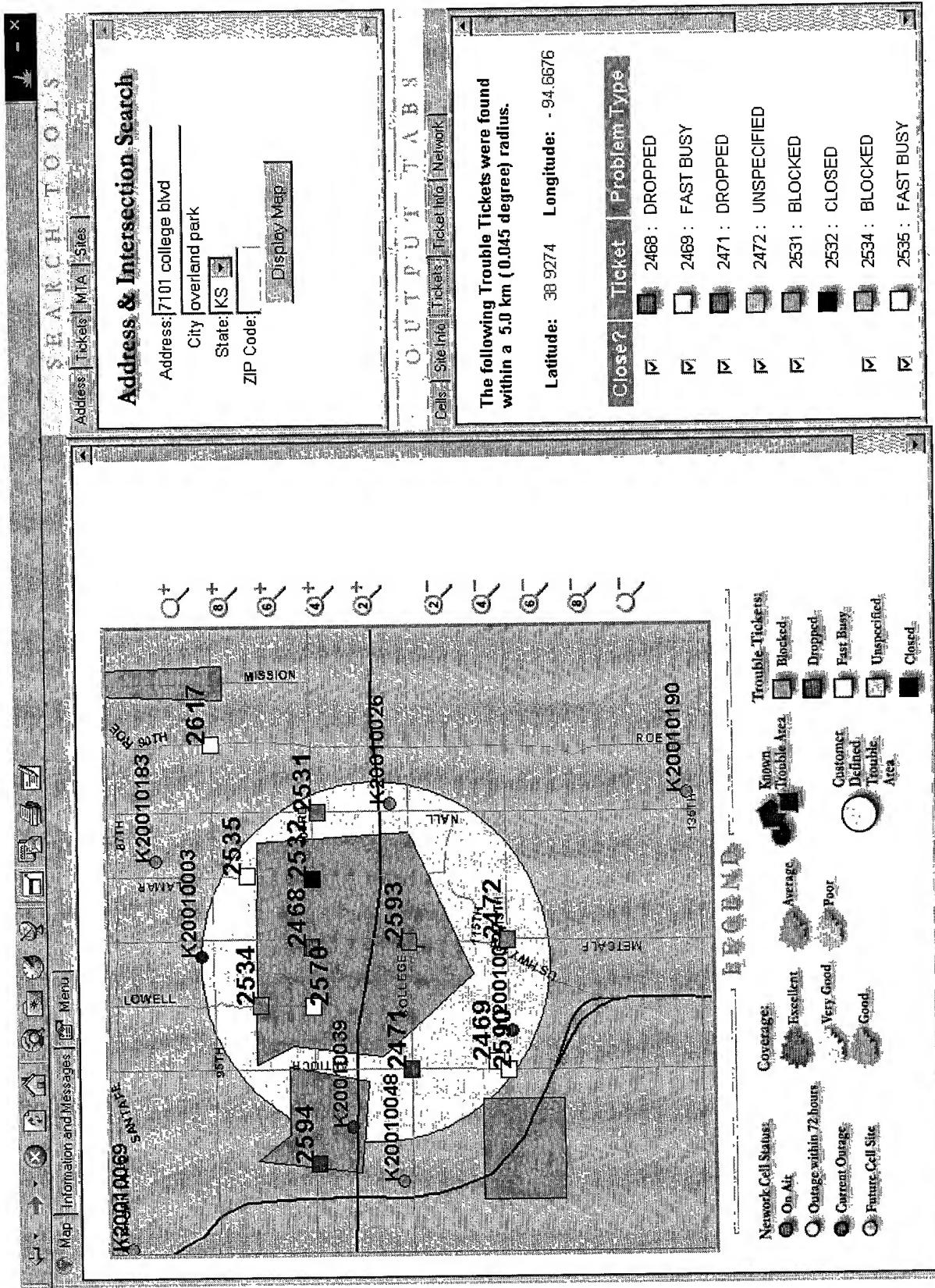


FIG. 11

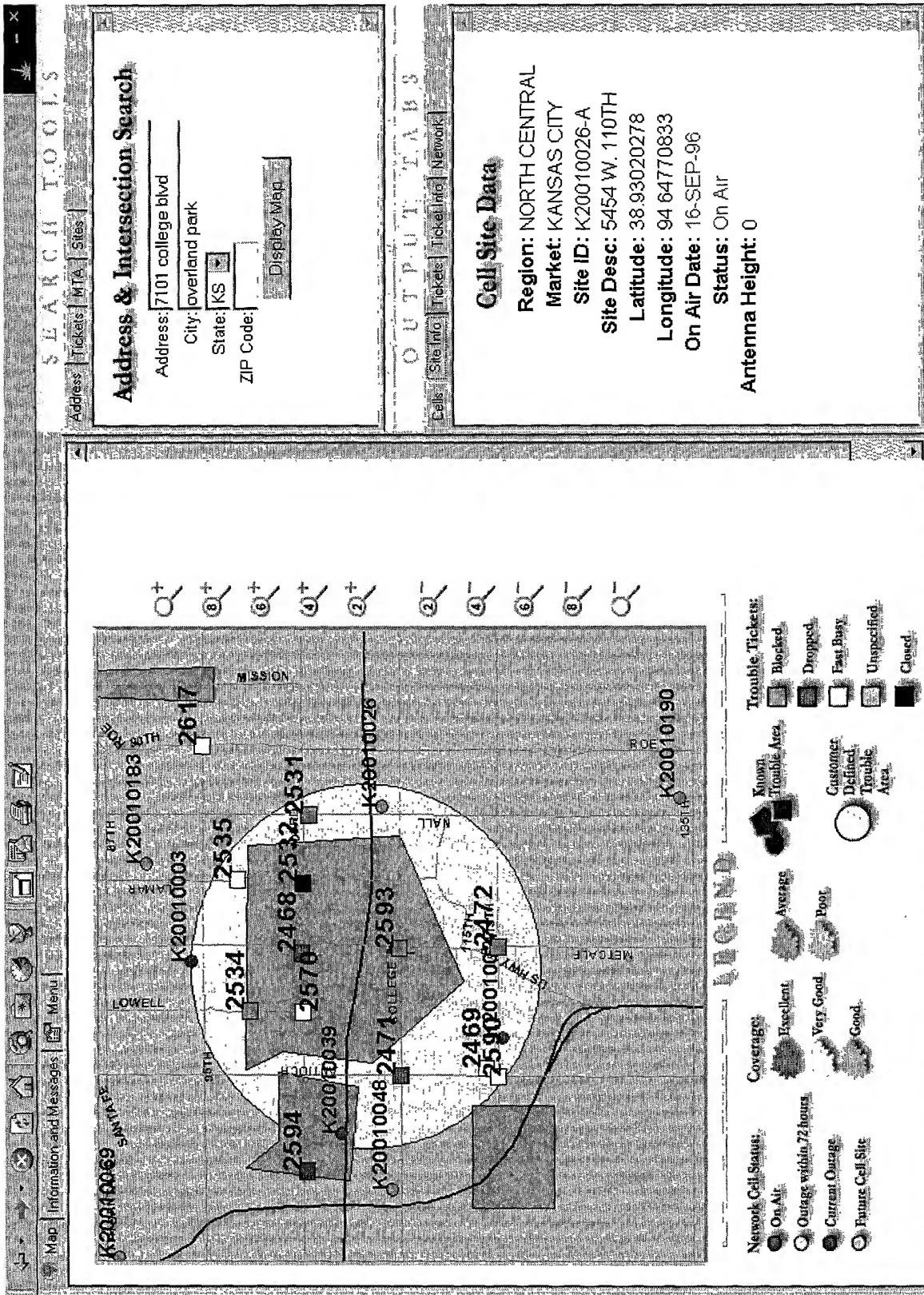


FIG. 12

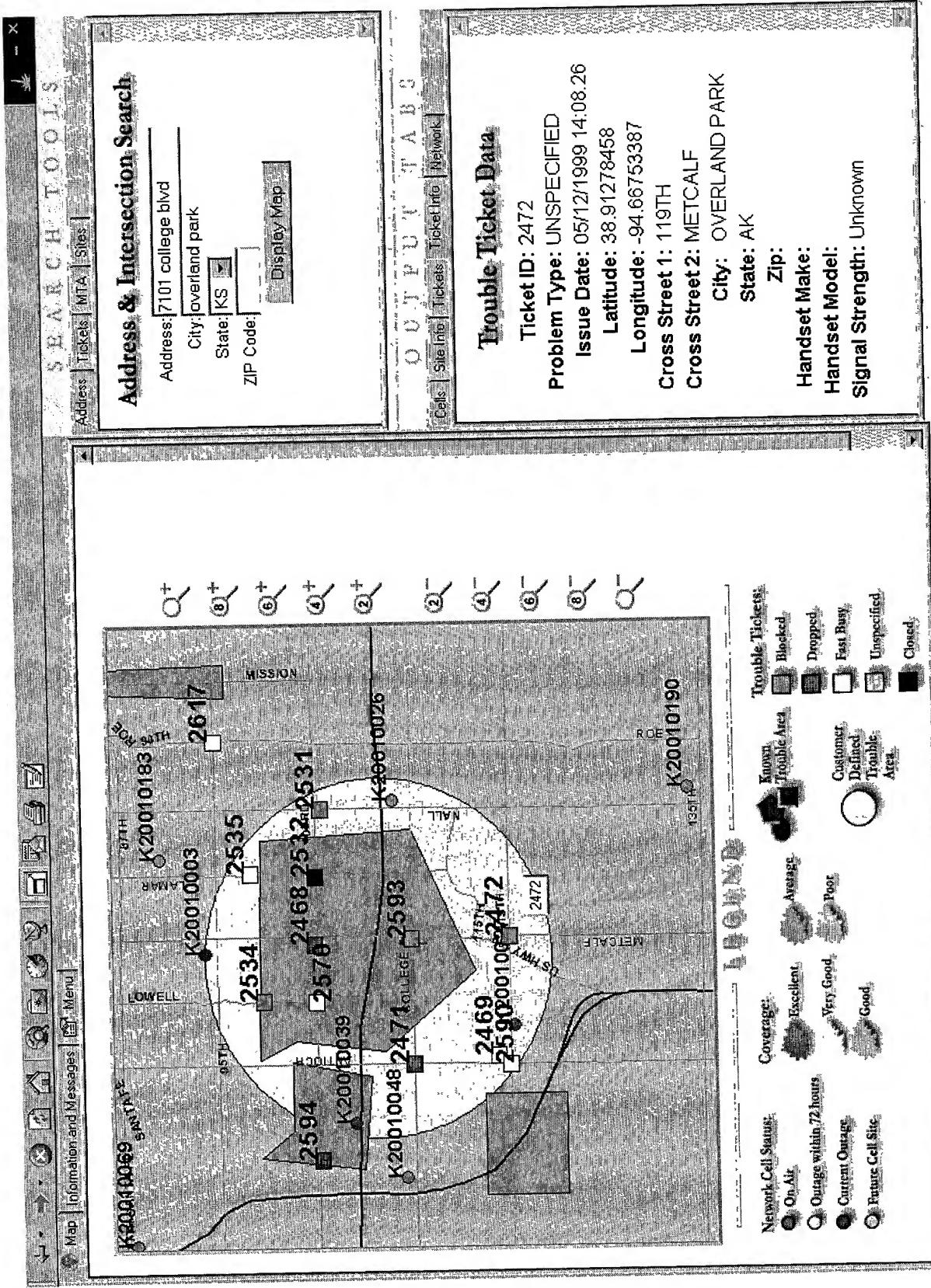


FIG. 13

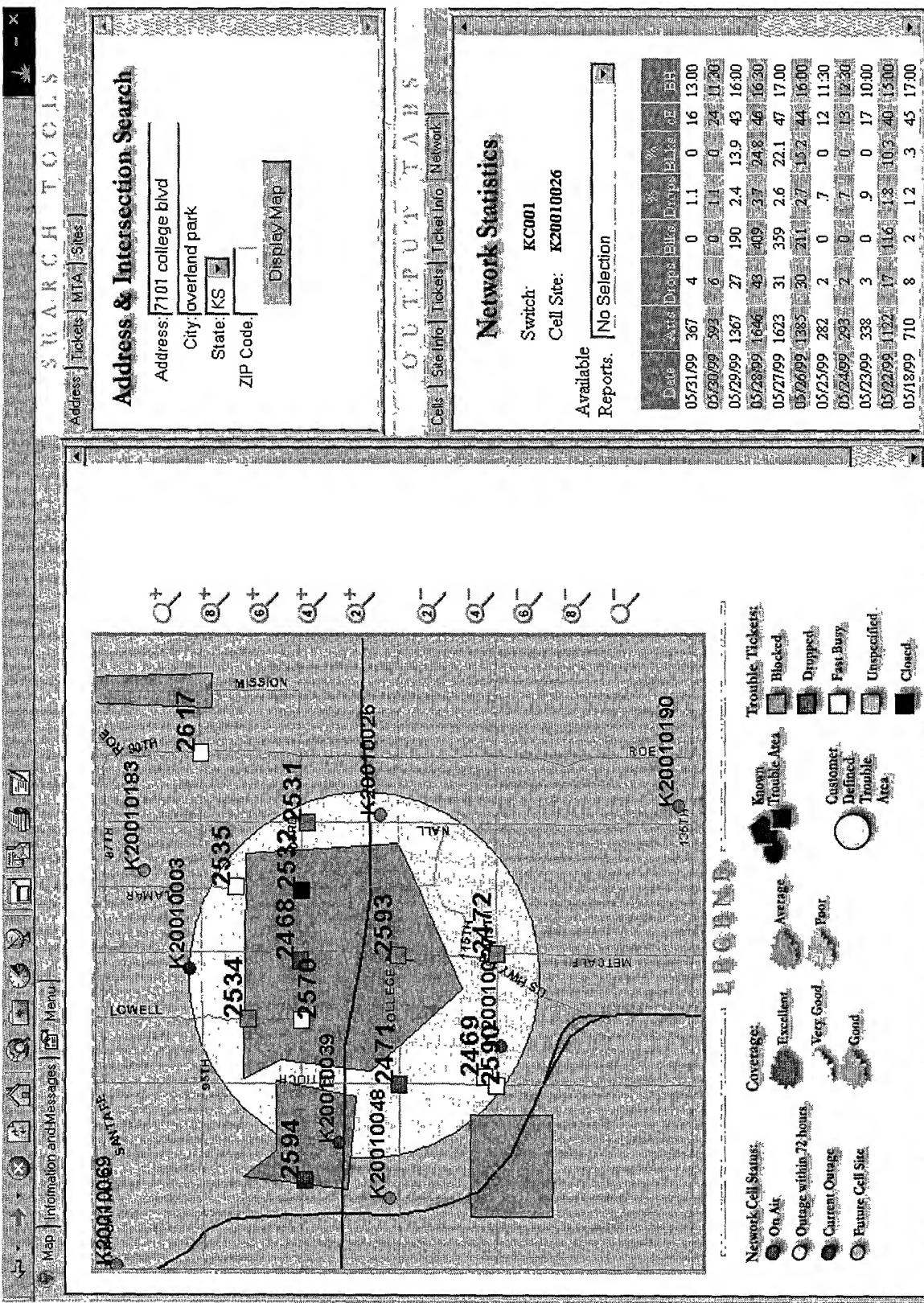
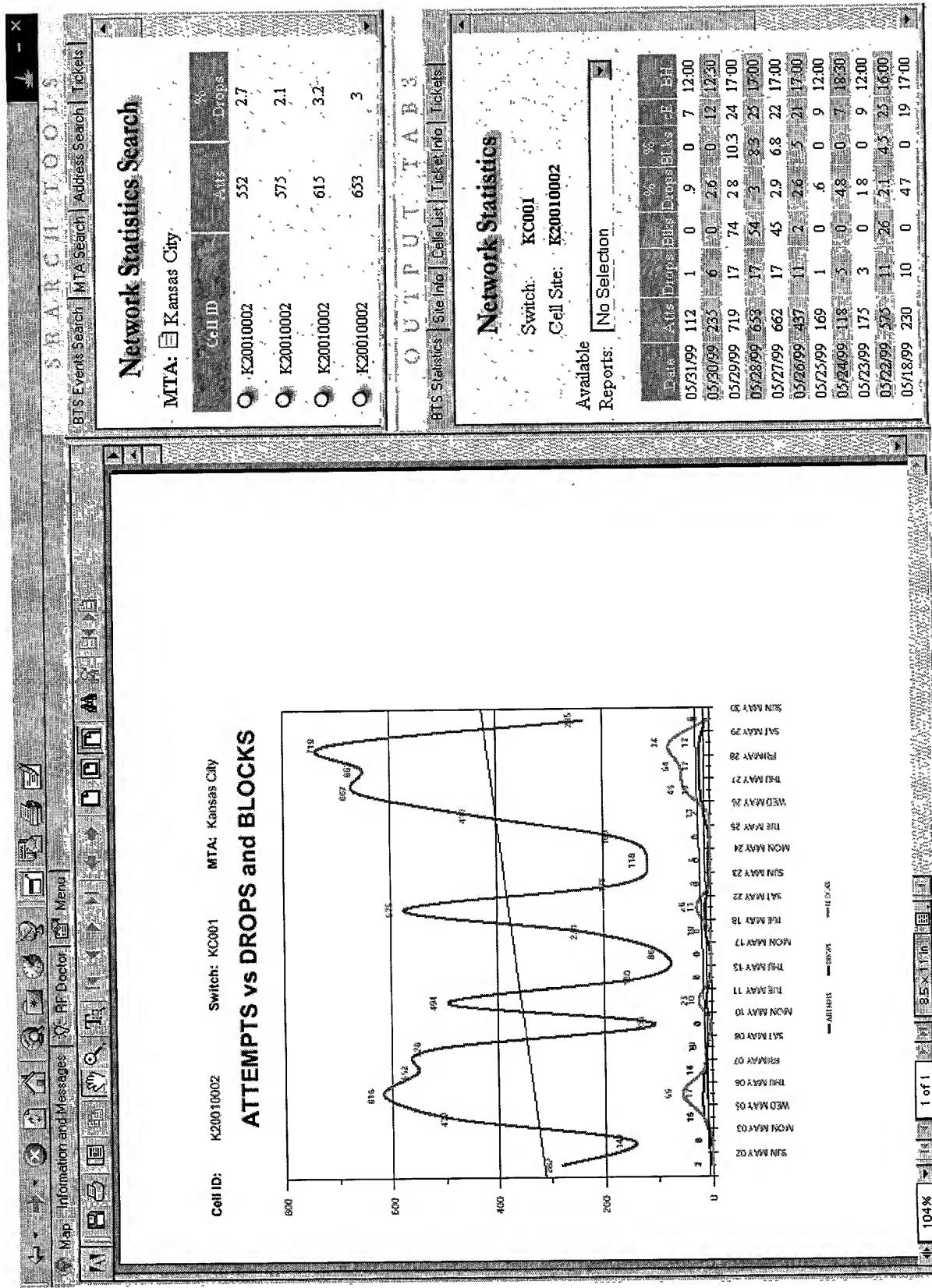


FIG. 14



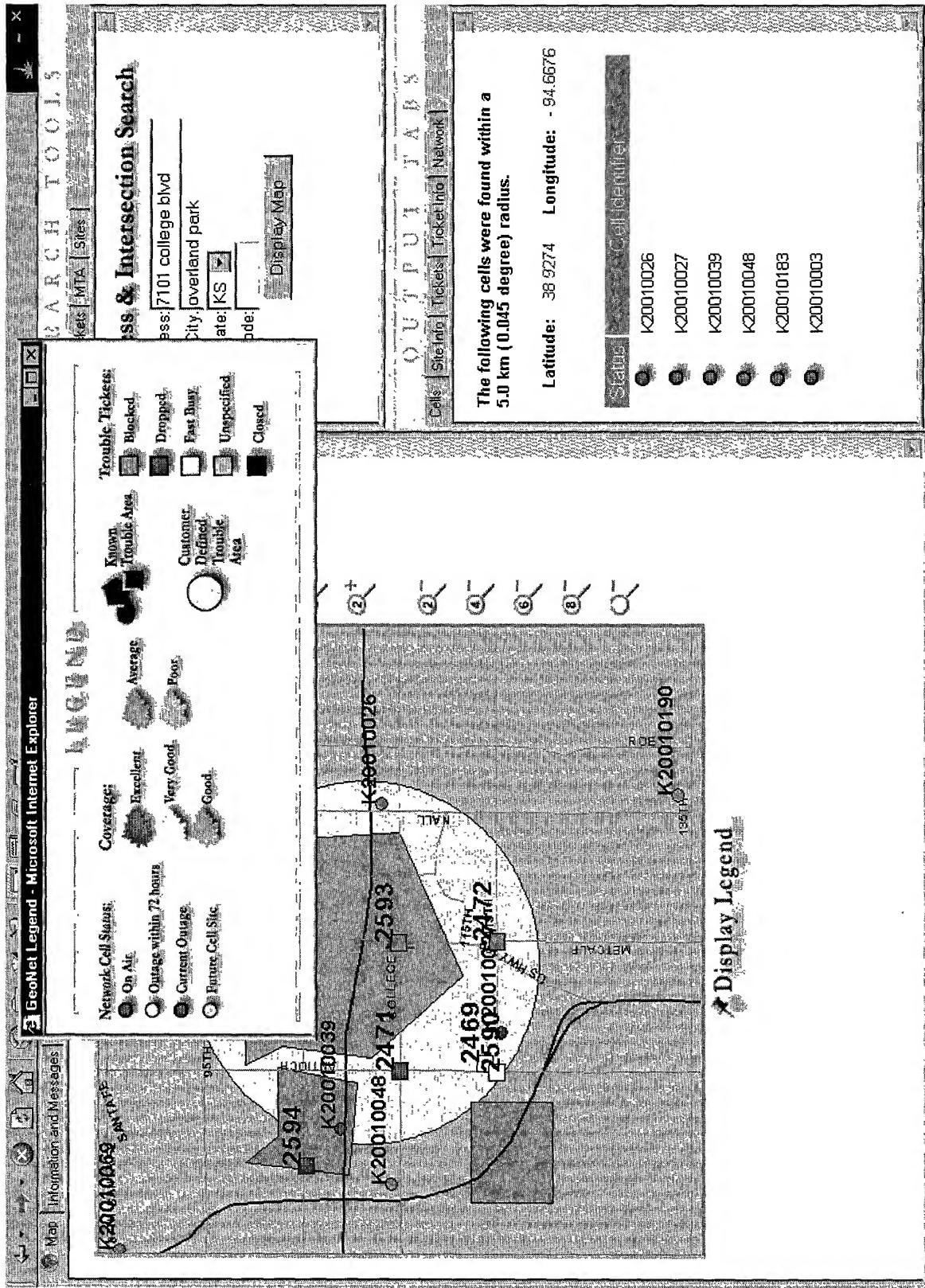
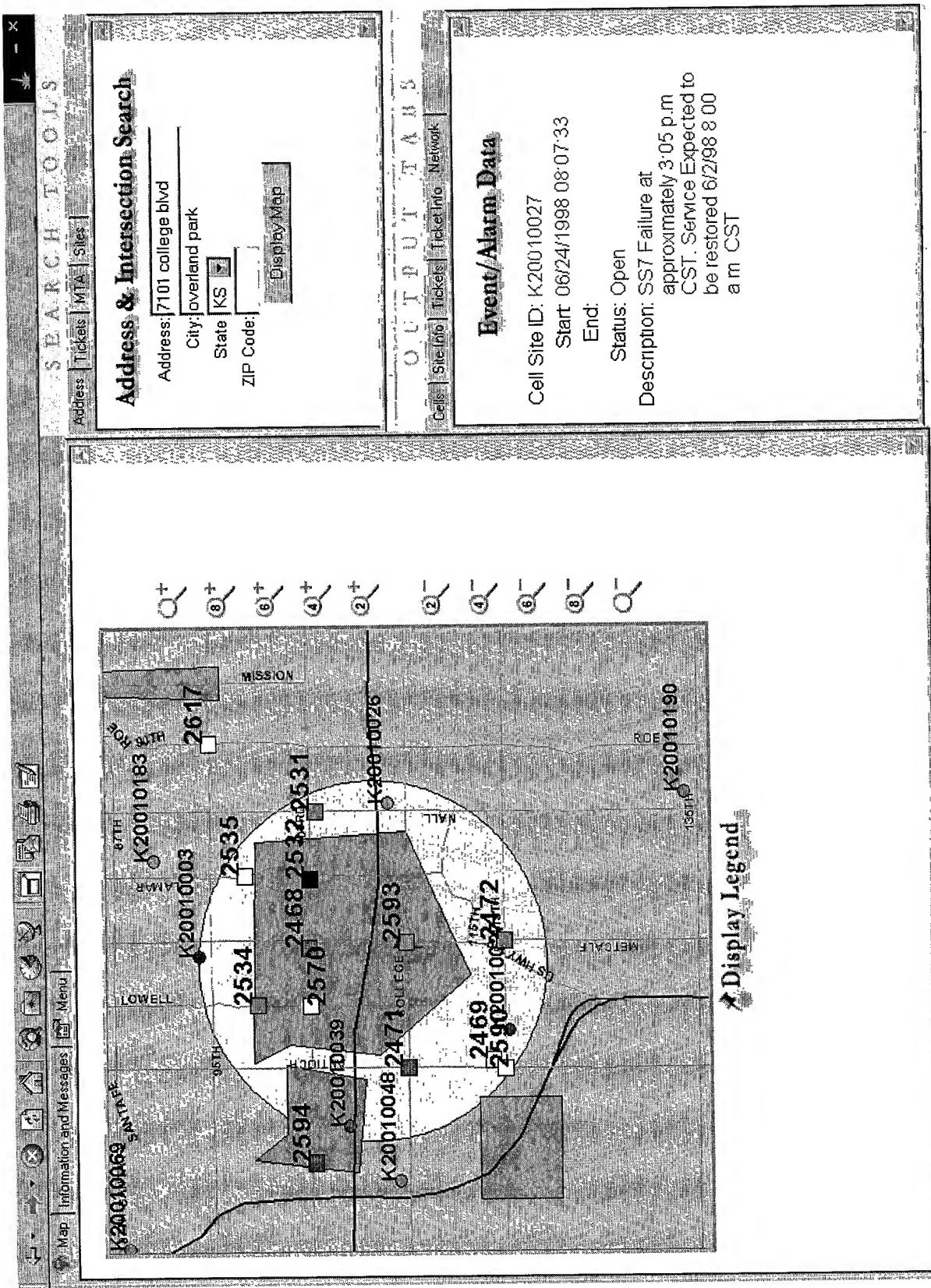


FIG. 16

FIG. 17



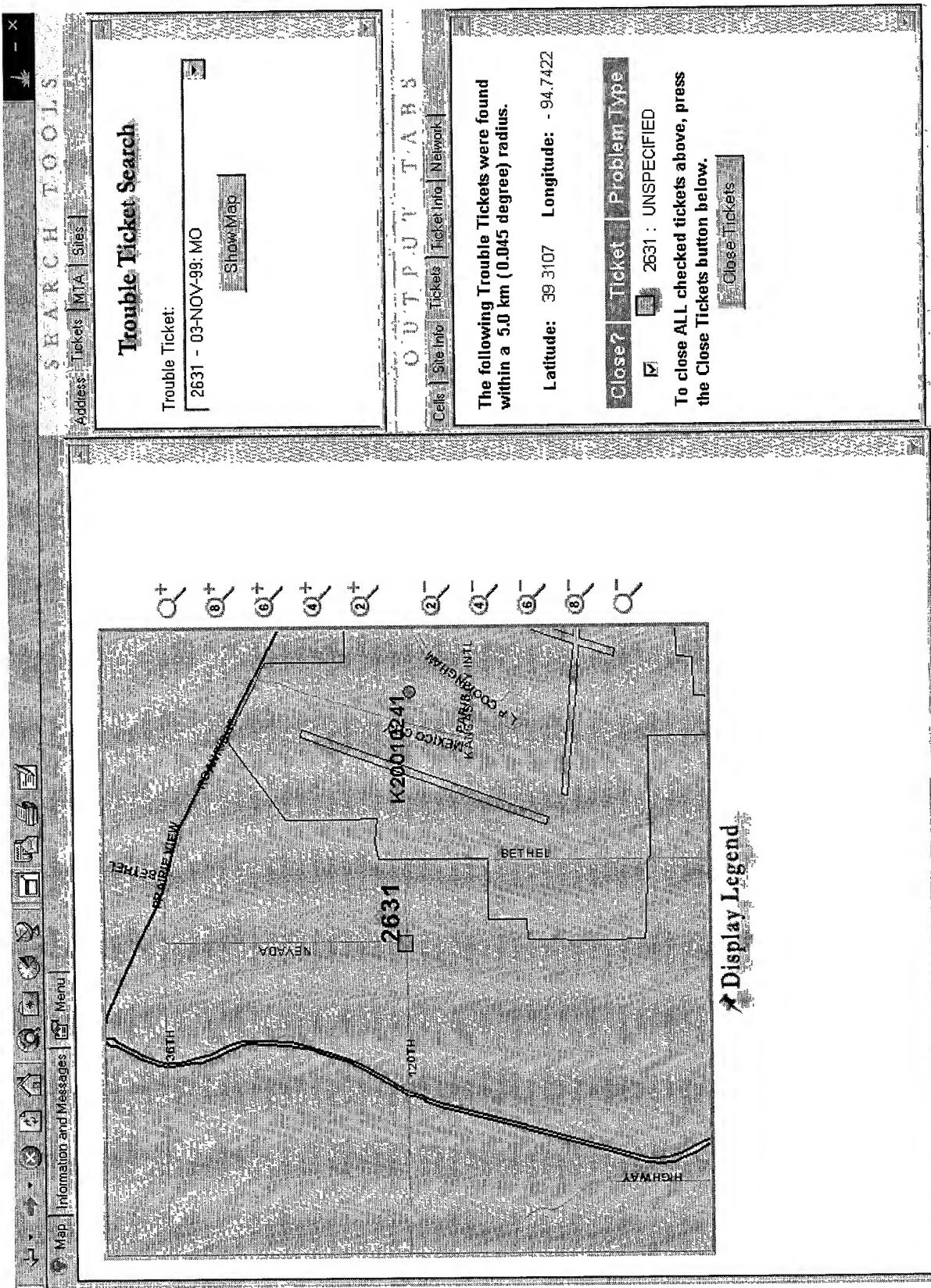


FIG. 18

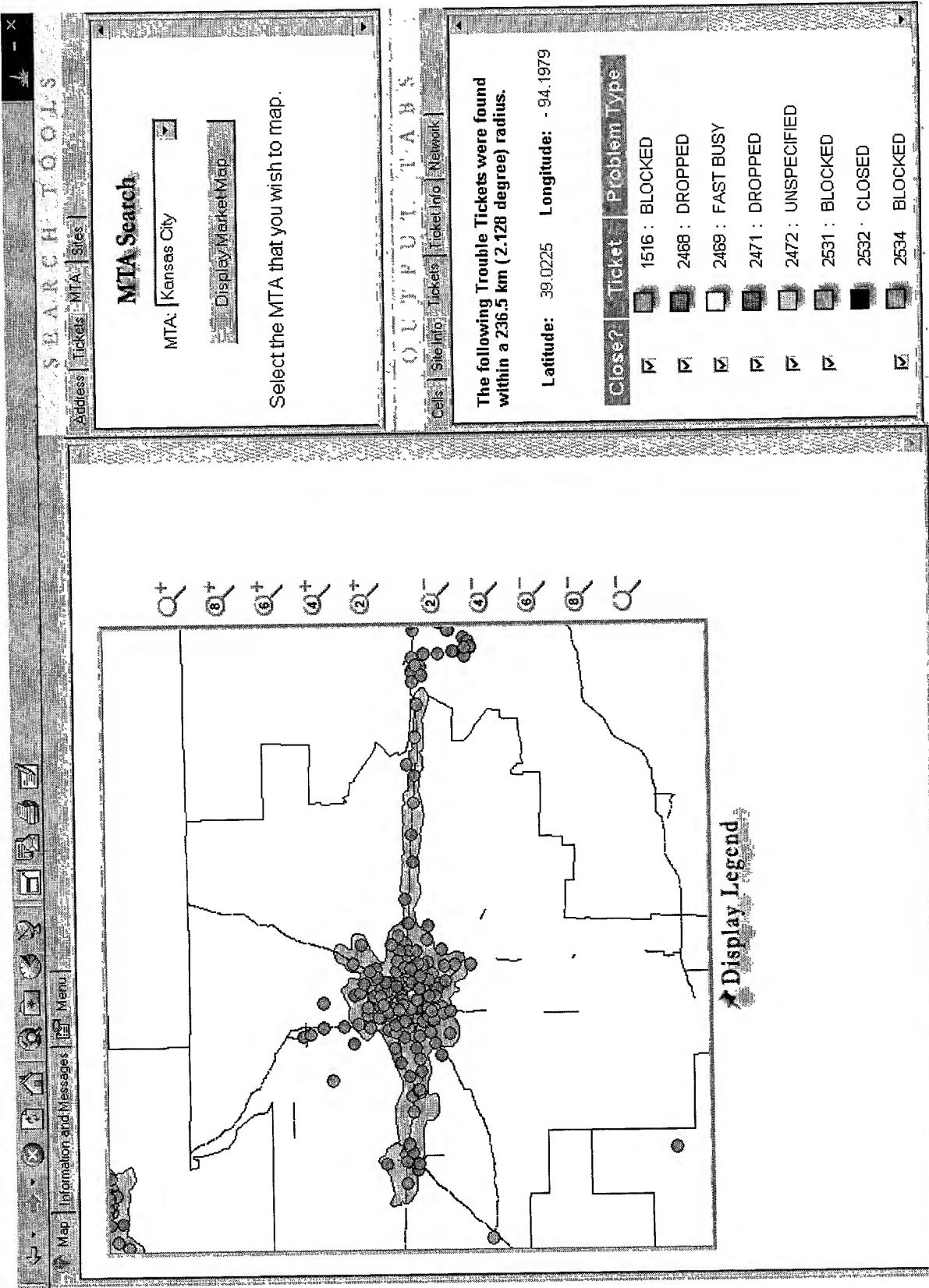


FIG. 19

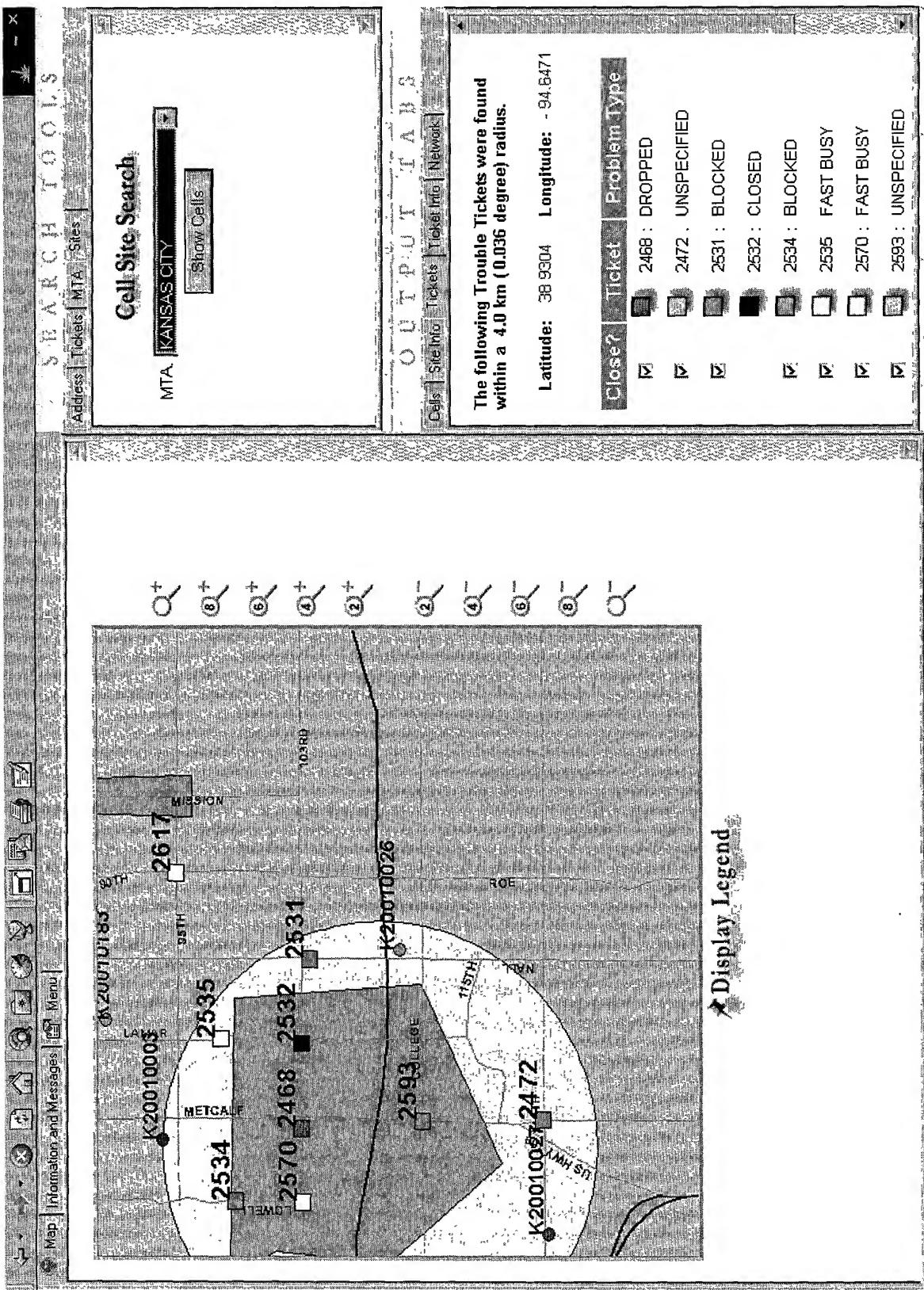
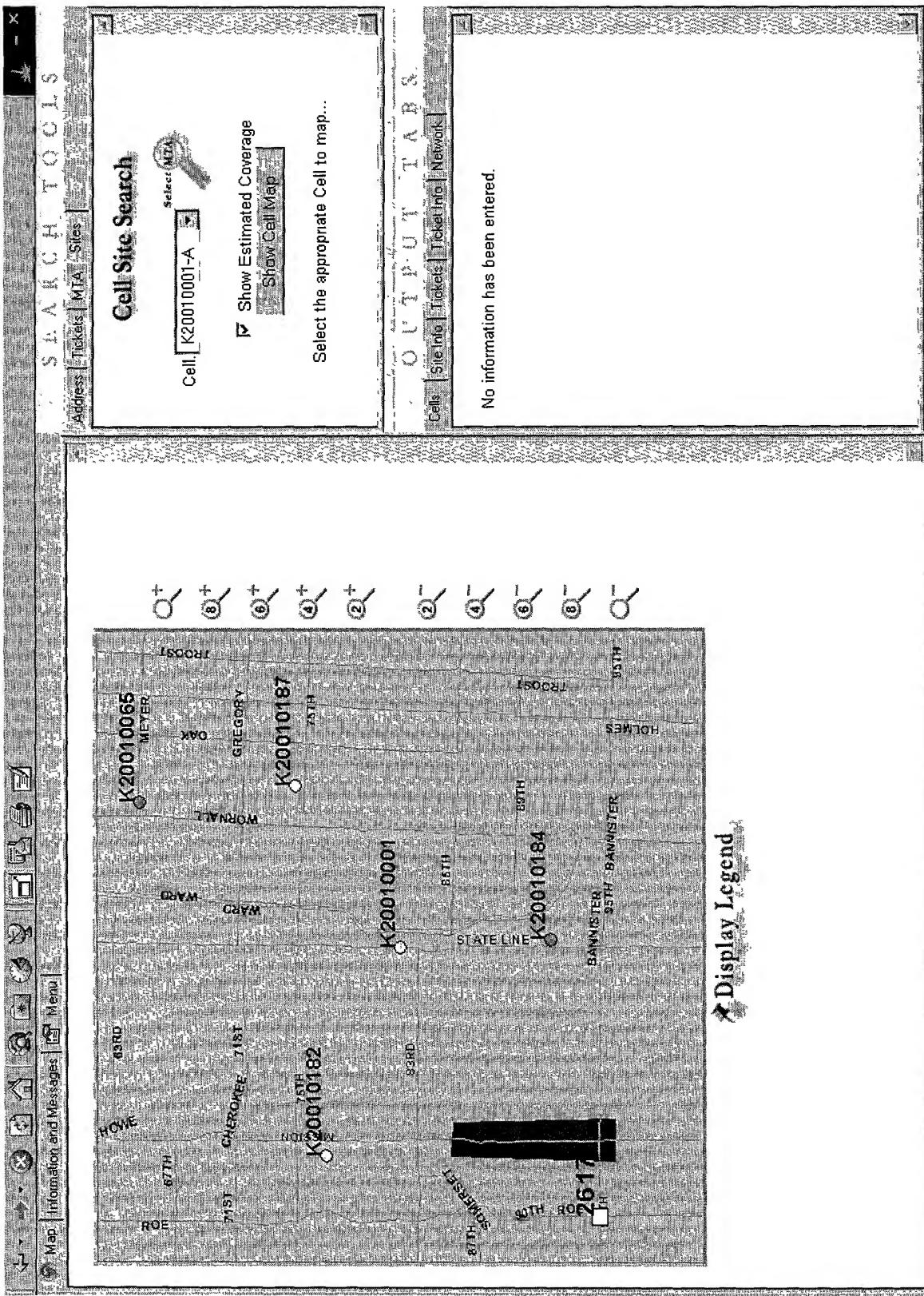


FIG. 20

FIG. 21



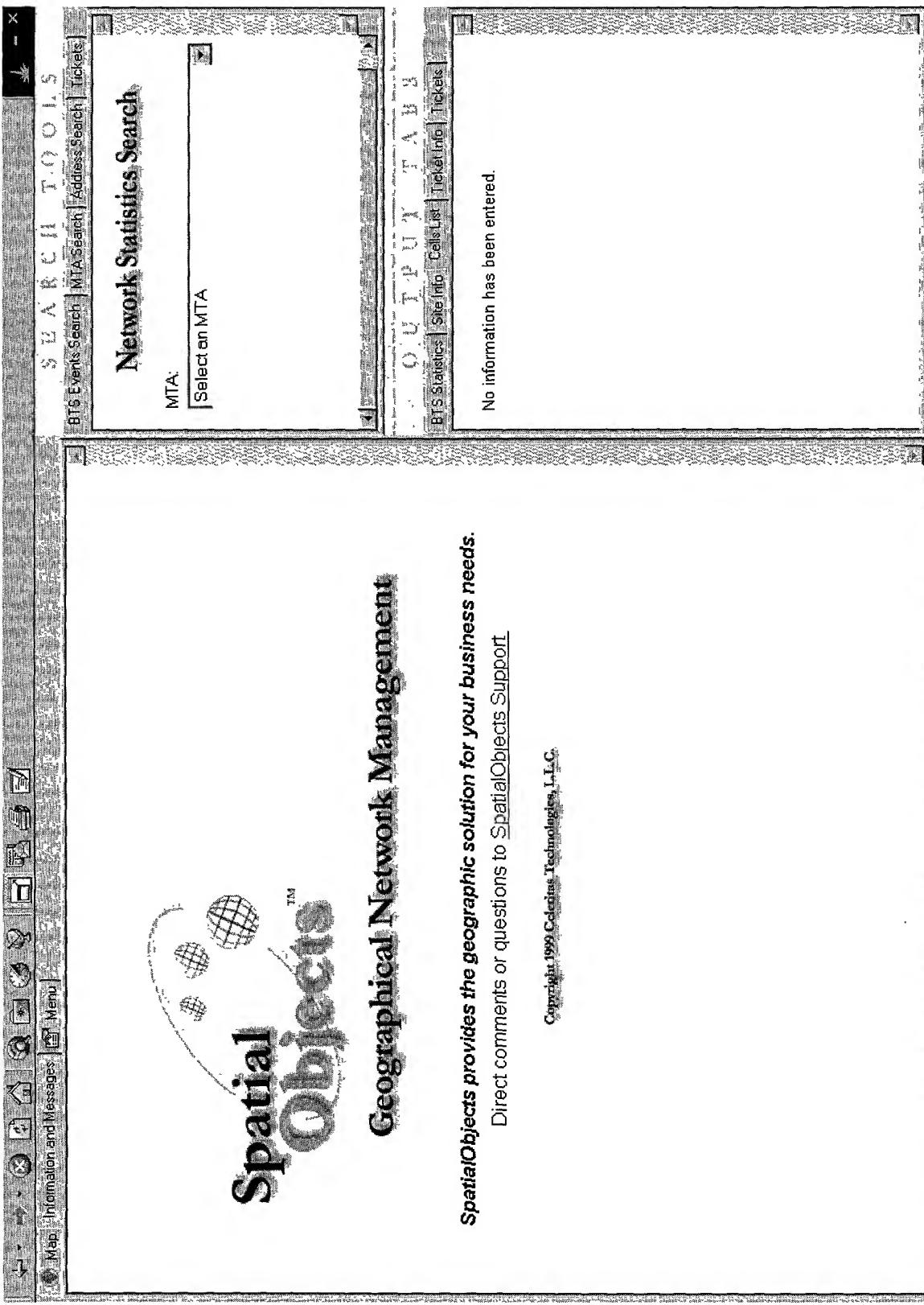


FIG. 22A

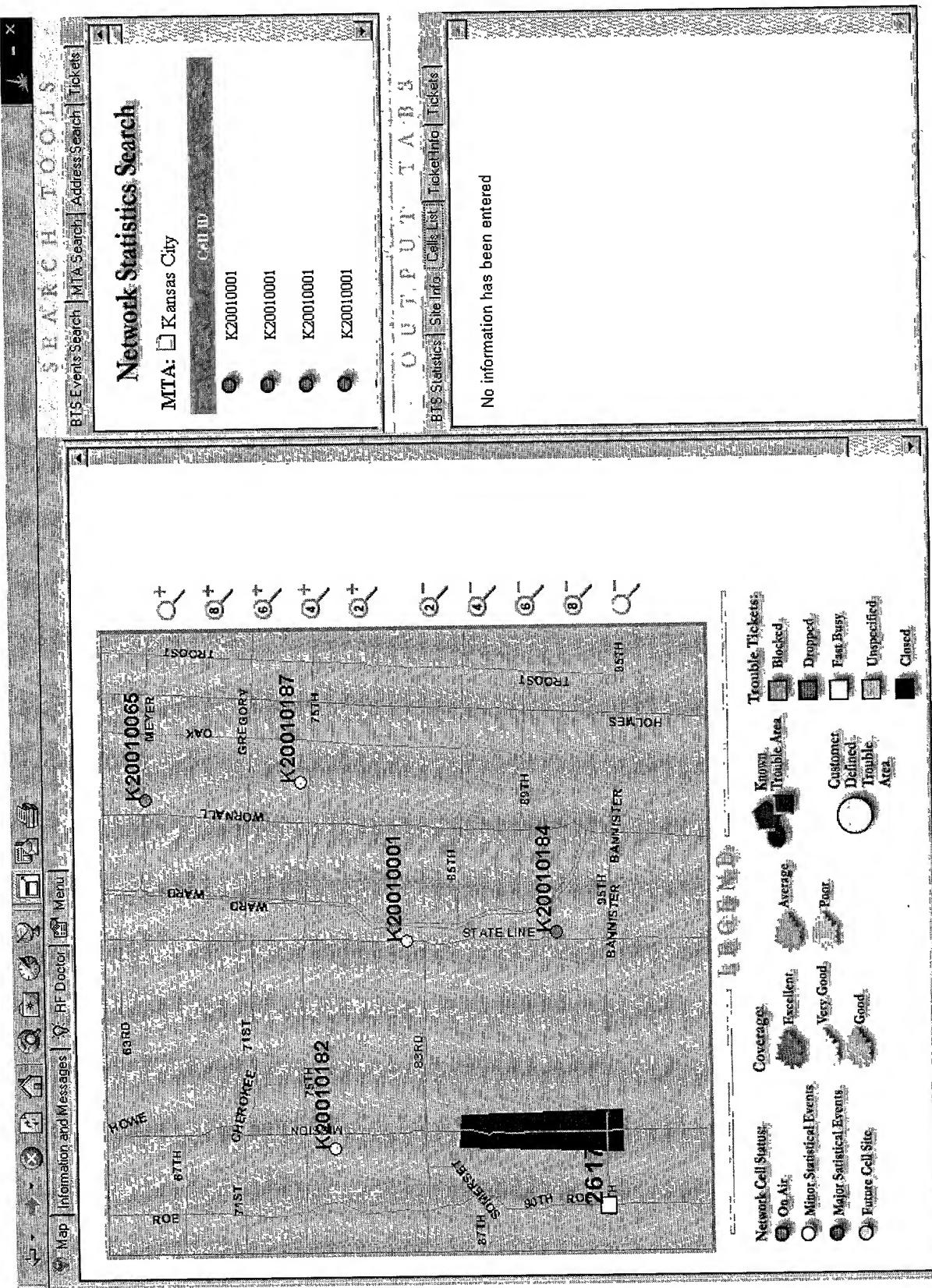


FIG. 22B

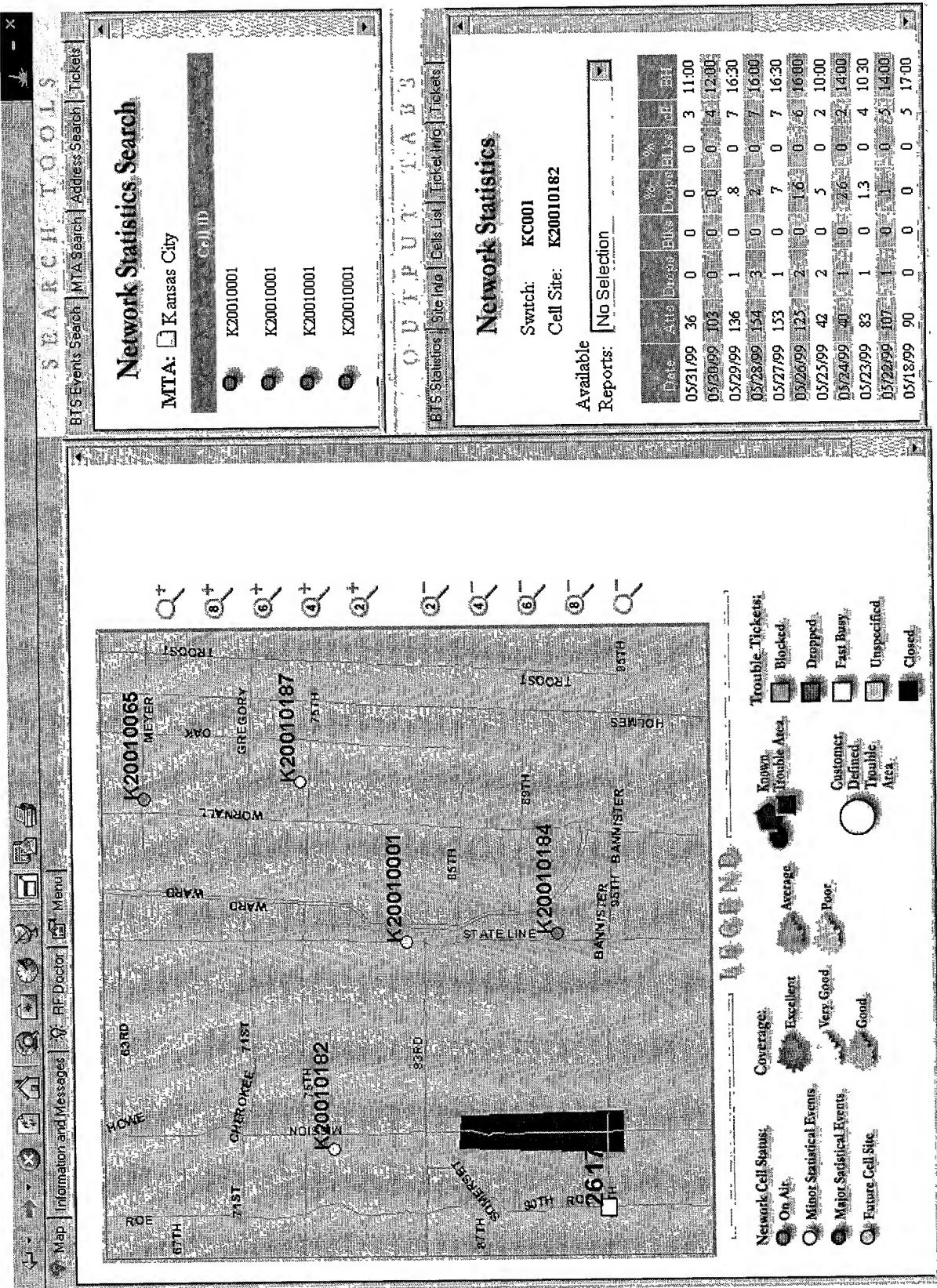


FIG. 23

FIG. 24

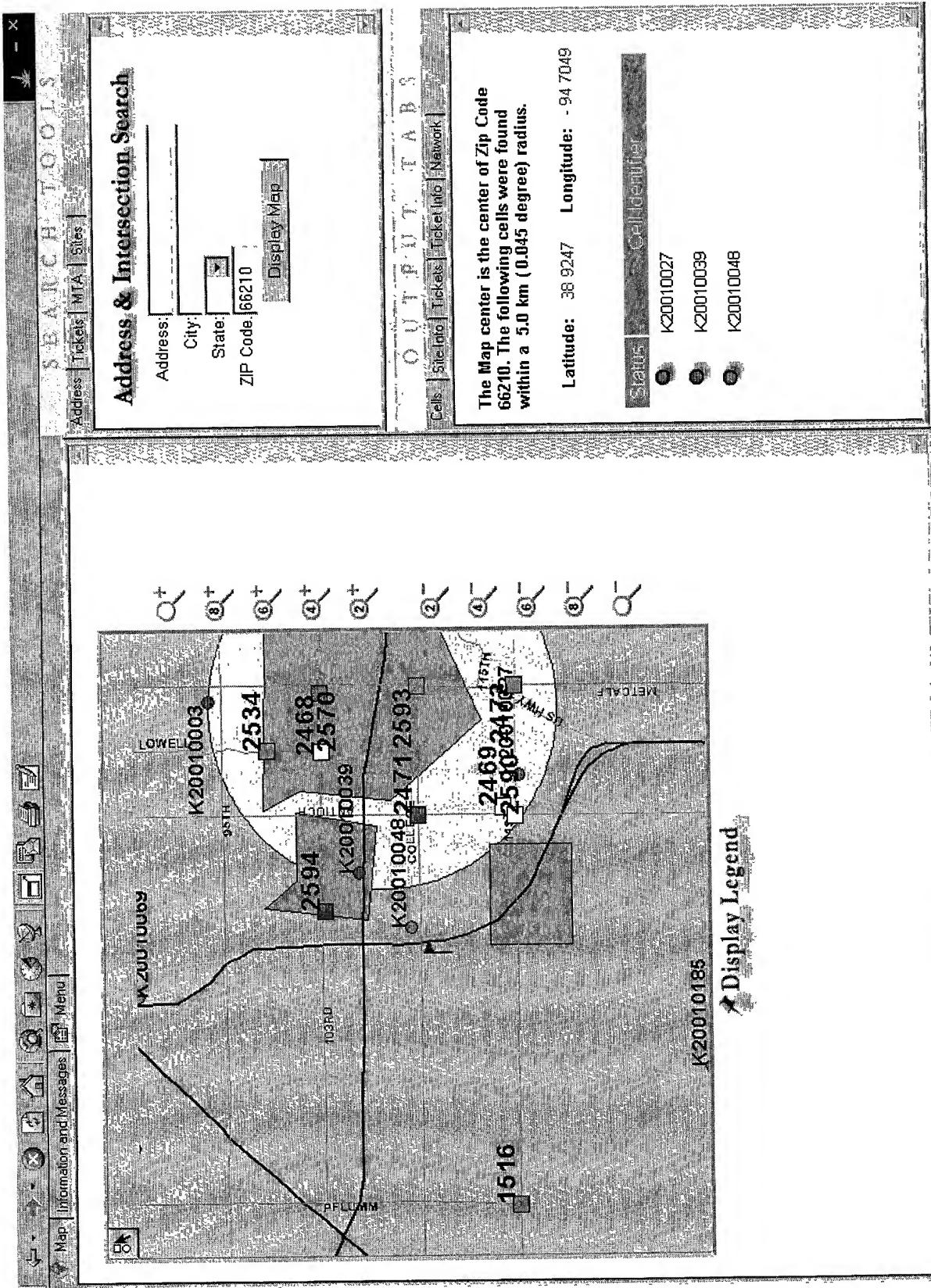


FIG. 25

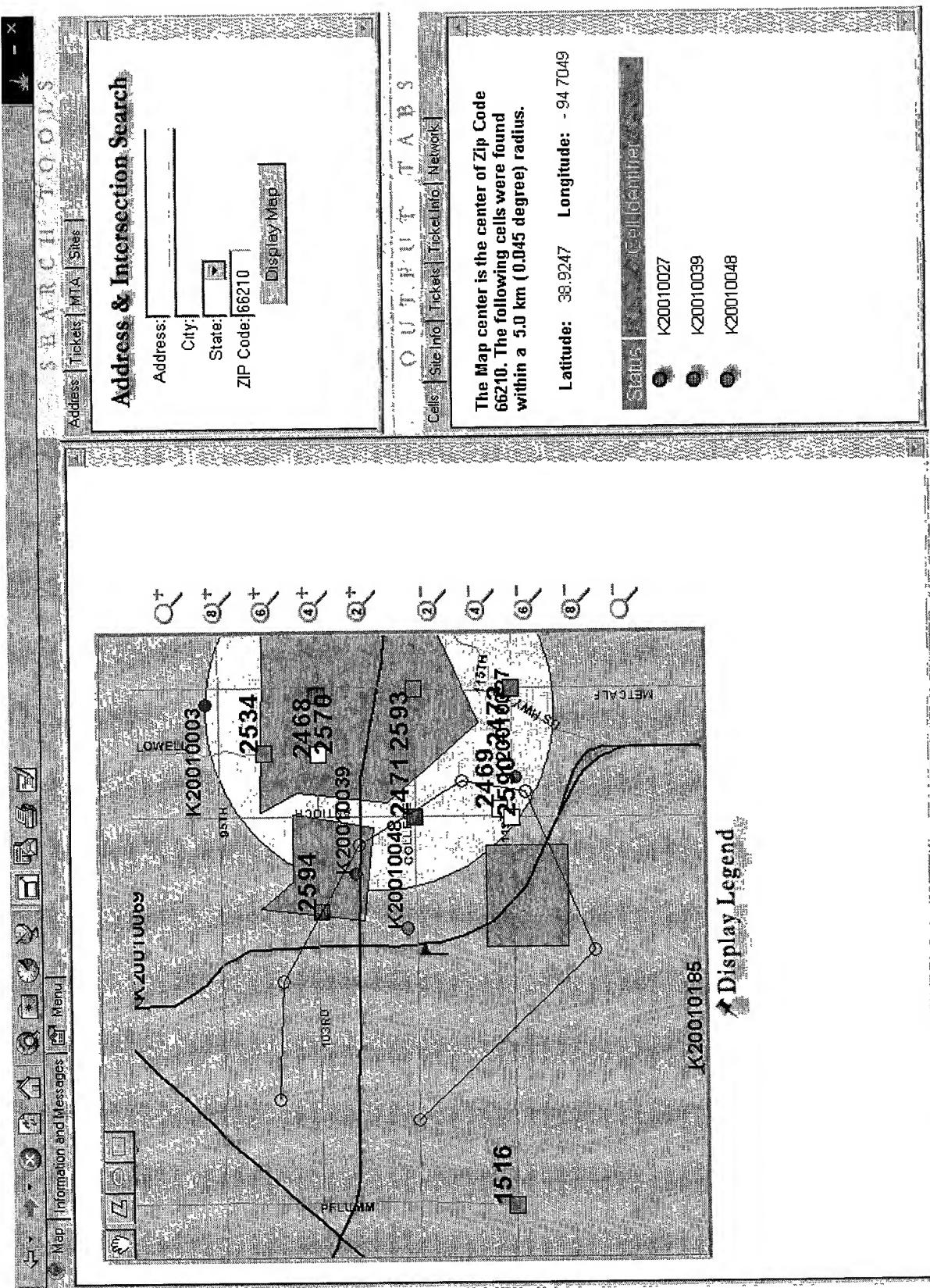
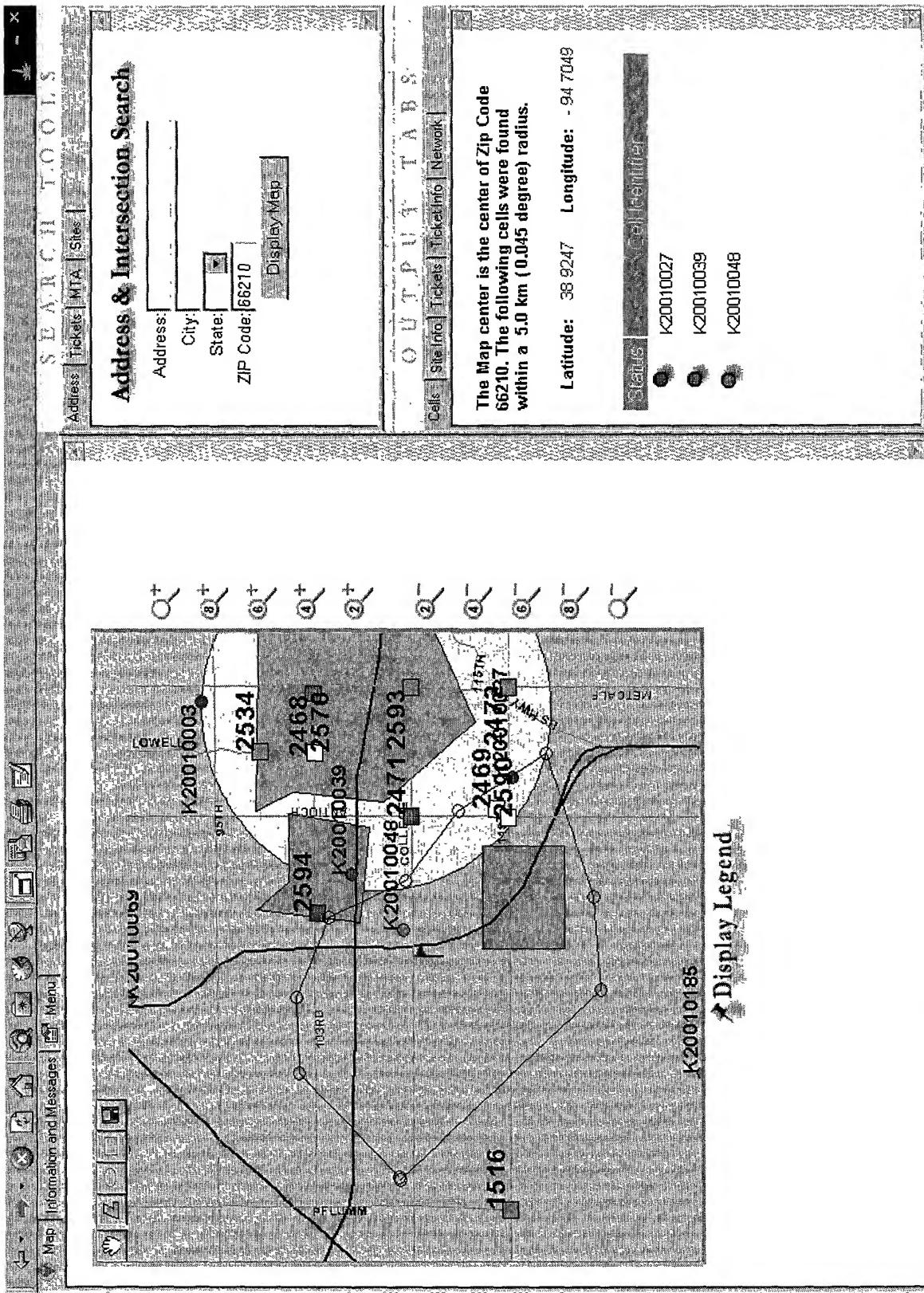


FIG. 26



[Map](#) [Information and Message](#) [RF Docs](#) [Help](#) [Menu](#)

Define Trouble Area

Trouble Area ID: (Required)

Trouble Area Title: (Required)

Start Date:

Anticipated Date of Resolution:

Proposed Resolution:

To complete the definition of this trouble area, please fill in the form above and press the commit button.

[BTS Events Search](#) [Address Search](#) [Tickets](#)

Address & Intersection Search

Address:

City:

State: ZIP Code:

[BTS Statistics](#) [Site Info](#) [Cells List](#) [Ticketing](#) [Tickets](#)

The following cells were found within a 5.0 km (0.045 degree) radius.

Latitude: 38.9260 Longitude: -94.6946

Status	Cell Identifier
<input checked="" type="radio"/>	K20010027
<input type="radio"/>	K20010039
<input type="radio"/>	K20010048
<input type="radio"/>	K20010069
<input type="radio"/>	K20010183
<input type="radio"/>	K20010215
<input type="radio"/>	K20010003

FIG. 27

SpatialObjects Trouble Ticket Entry Utility

Ticket ID:

Cross Street 1:

Cross Street 2:

City:

State:

Zip:

Ticket Type: FAST BUSY

Customer Email:

Geocode Results

Ticket ID:

Latitude:

Longitude:

Coverage Attributes:

Trouble Area Attributes:

Other tickets at this location?: No

Neighboring Cell Count:

Neighboring Ticket Count:

Search Radius:

FIG. 28

S E A R C H O U T L E																	
Map	Information and Messages																
Menu	Close Trouble Tickets																
<h3>Address & Intersection Search</h3> <p>To complete the closer of the trouble tickets listed below, confirm the date of closer and specify a reason for the tickets being closed. If desired, check the box labeled "Notify Customer" and the customer will be notified via their phone of their problem's resolution.</p> <table border="1"> <tr> <td>Resolution of Reason:</td> <td><input type="text"/></td> </tr> <tr> <td colspan="2"><input type="button" value="Commit Ticket Close"/></td> </tr> <tr> <td colspan="2"><input type="button" value="Cancel"/></td> </tr> </table>		Resolution of Reason:	<input type="text"/>	<input type="button" value="Commit Ticket Close"/>		<input type="button" value="Cancel"/>											
Resolution of Reason:	<input type="text"/>																
<input type="button" value="Commit Ticket Close"/>																	
<input type="button" value="Cancel"/>																	
<table border="1"> <tr> <td><input type="radio"/> U.T.P</td> <td><input type="radio"/> UTP</td> <td><input type="radio"/> A.B.S</td> </tr> <tr> <td><input type="checkbox"/> Site Info</td> <td><input type="checkbox"/> Tickets</td> <td><input type="checkbox"/> Network</td> </tr> <tr> <td><input checked="" type="checkbox"/> 1516 : BLOCKED</td> <td><input type="checkbox"/> 2468 : DROPPED</td> </tr> <tr> <td><input type="checkbox"/> 2469 : FAST BUSY</td> <td><input type="checkbox"/> 2472 : UNSPECIFIED</td> </tr> <tr> <td><input type="checkbox"/> 2471 : DROPPED</td> <td><input type="checkbox"/> 2534 : BLOCKED</td> </tr> <tr> <td><input type="checkbox"/> 2570 : FAST BUSY</td> <td><input type="checkbox"/> 2590 : FAST BUSY</td> </tr> <tr> <td><input type="checkbox"/> 2593 : UNSPECIFIED</td> <td><input type="checkbox"/> 2694 : DROPPED</td> </tr> </table> <p>To close ALL checked tickets above, press the Close Tickets button below.</p> <input type="button" value="Close Tickets"/>		<input type="radio"/> U.T.P	<input type="radio"/> UTP	<input type="radio"/> A.B.S	<input type="checkbox"/> Site Info	<input type="checkbox"/> Tickets	<input type="checkbox"/> Network	<input checked="" type="checkbox"/> 1516 : BLOCKED	<input type="checkbox"/> 2468 : DROPPED	<input type="checkbox"/> 2469 : FAST BUSY	<input type="checkbox"/> 2472 : UNSPECIFIED	<input type="checkbox"/> 2471 : DROPPED	<input type="checkbox"/> 2534 : BLOCKED	<input type="checkbox"/> 2570 : FAST BUSY	<input type="checkbox"/> 2590 : FAST BUSY	<input type="checkbox"/> 2593 : UNSPECIFIED	<input type="checkbox"/> 2694 : DROPPED
<input type="radio"/> U.T.P	<input type="radio"/> UTP	<input type="radio"/> A.B.S															
<input type="checkbox"/> Site Info	<input type="checkbox"/> Tickets	<input type="checkbox"/> Network															
<input checked="" type="checkbox"/> 1516 : BLOCKED	<input type="checkbox"/> 2468 : DROPPED																
<input type="checkbox"/> 2469 : FAST BUSY	<input type="checkbox"/> 2472 : UNSPECIFIED																
<input type="checkbox"/> 2471 : DROPPED	<input type="checkbox"/> 2534 : BLOCKED																
<input type="checkbox"/> 2570 : FAST BUSY	<input type="checkbox"/> 2590 : FAST BUSY																
<input type="checkbox"/> 2593 : UNSPECIFIED	<input type="checkbox"/> 2694 : DROPPED																

FIG. 29

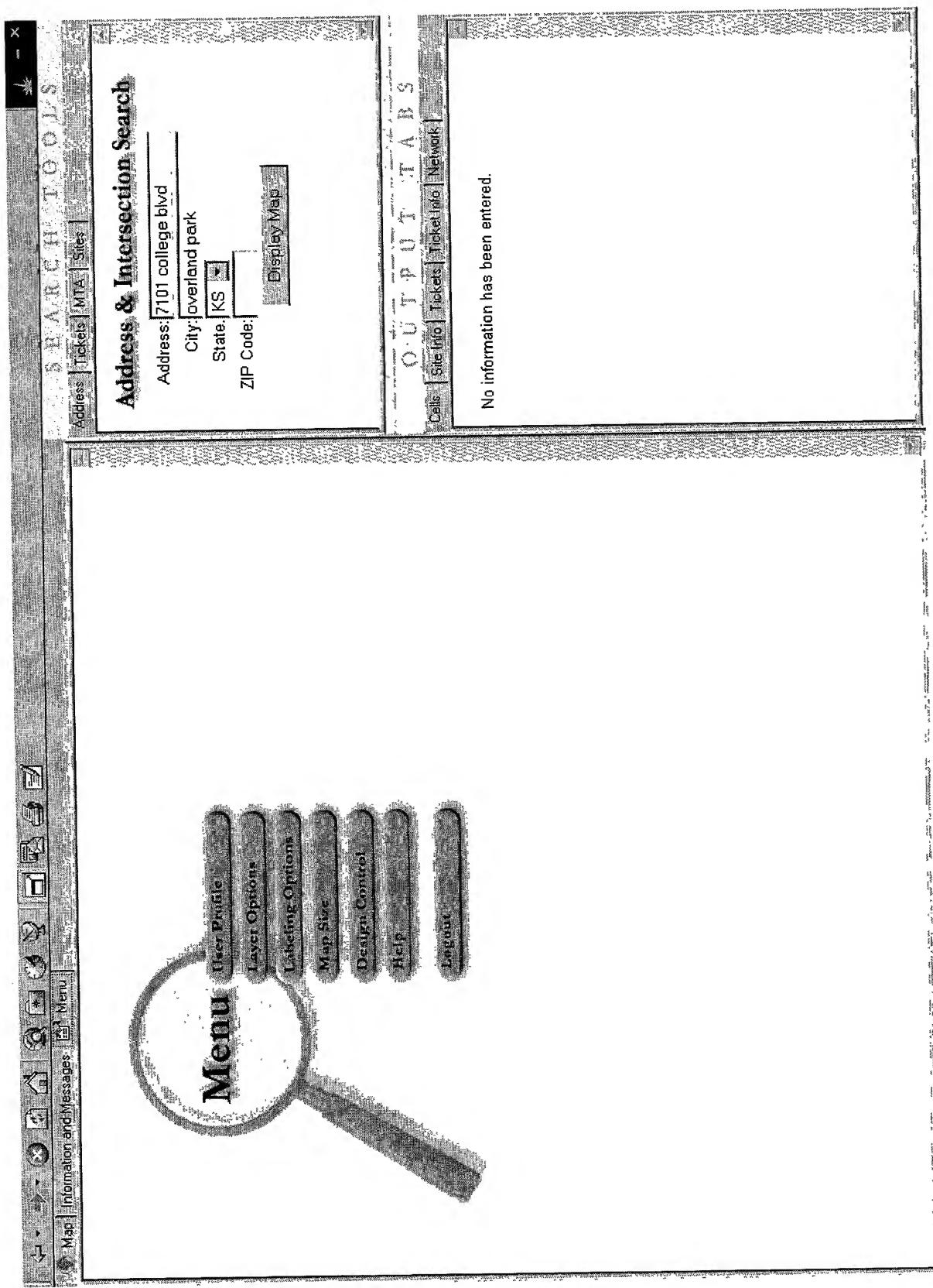


FIG. 30

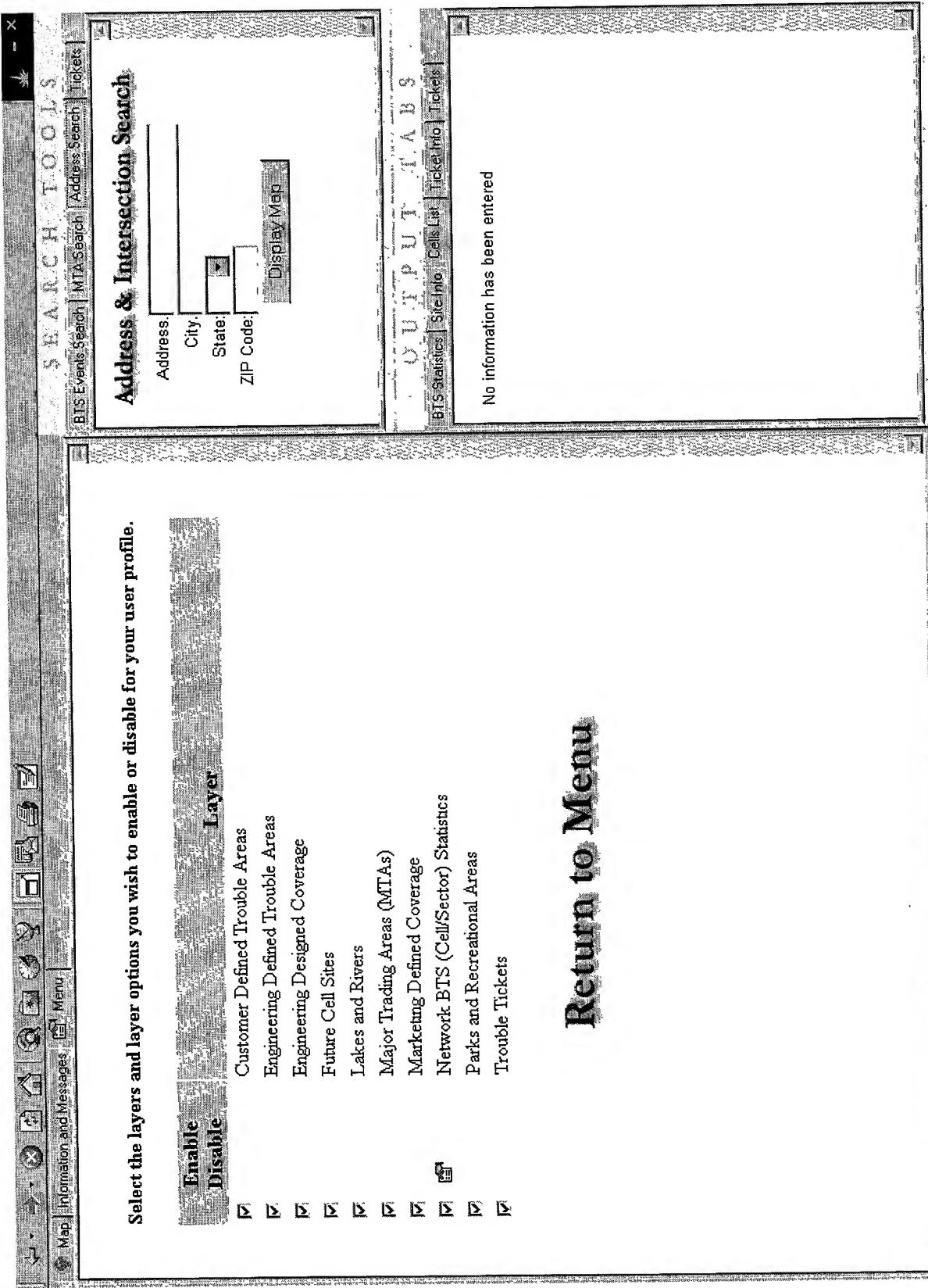


FIG. 31

The screenshot displays three windows from a software application:

- Main Menu Window:** Shows a toolbar with icons for Map, Information and Messages, and a menu bar with "File", "Edit", "View", "Insert", "Format", "Tools", "Help".
- Address & Intersection Search Window:** A modal dialog with tabs for "Address", "Tickets", "MA", and "Sites". It contains fields for "Address" (701 college blvd), "City" (overland park), "State" (KS), and "ZIP Code". A "Display Map" button is also present.
- Legend Settings Window:** A modal dialog titled "Return to Menu". It lists three settings with descriptions:
 - User Classification:** Set to "Customer Service". Description: "Select the user classification that best fits your role while using SpatialObjects. This will govern the options available to you and the reaction of the tool to certain requests."
 - Search/Display Distance:** Set to "5" (km). Description: "This defines the search and display distance (in Kilometers) used for all map generation, when not executing a zoom operation."
 - Legend Options:** Set to "On Page". Description: "This setting governs how the legend will be presented. The "Drill Down" setting will save you time if accessing SpatialObjects over low speed network connections."

FIG. 32

The screenshot displays a mobile application interface with two windows overlaid.

Top Window: Address & Intersection Search

- Header: S E A R C H T O O L S
- Buttons: Address | Tickets | MIA | Sites
- Text Input: Address: 701 college blvd
- Text Input: City: overland park
- Text Input: State: KS
- Text Input: ZIP Code:
- Button: Display Map

Bottom Window: Hot Spot Options

- Header: Hot Spot Options
- List:
 - Allow Hot Spot Definition
 - Disallow Hot Spot Definition
- Button: Cancel

A message box in the center states: "No information has been entered."

FIG. 33

Please click on the image size that best fits your display

400 X 400

500 X 400

600 X 400

500 X 500

600 X 500

S F A R C H T O O L S
Address Tickets RTA Sites

Address & Intersection Search

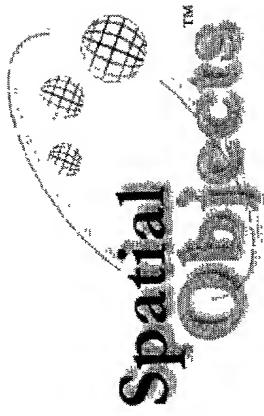
Address: 7101 college blvd
City: overland park
State: KS
ZIP Code:
Display Map

Calls Site Info Tickets Ticket Info Network

No information has been entered.

FIG. 34

File Edit View Insert Options Tools Help



Geographical Network Management

Version 1.1

Login:

Password:

FIG. 35

Map | Information and Messages | |

Select the Network Statistic display options you wish to enable or disable for your user profile.

Enable	Disable	Network Statistics Display Attributes	Level	Critical Level	Description
<input type="checkbox"/>	<input type="checkbox"/>	Attempts	<input type="text" value="500"/>	<input type="text" value="950"/>	Alert if over this number of attempts.
<input type="checkbox"/>	<input type="checkbox"/>	Drops	<input type="text" value="100"/>	<input type="text" value="500"/>	Alert if Drops are greater than or equal to this value.
<input type="checkbox"/>	<input type="checkbox"/>	Blocks	<input type="text" value="10"/>	<input type="text" value="250"/>	Alert if Blocks are greater than or equal to this value.
<input type="checkbox"/>	<input type="checkbox"/>	% Drops	<input type="text" value="2 %"/>	<input type="text" value="45 %"/>	Alert if %Drops are greater than or equal to this percentage value.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	% Blocks:	<input type="text" value="5 %"/>	<input type="text" value="7 %"/>	Alert if %Blocks are greater than or equal to this percentage value.
<input type="checkbox"/>	<input type="checkbox"/>	Channel Erlangs	<input type="text" value="65"/>	<input type="text" value="17"/>	Alert if Channel Erlangs are greater than or equal to this value.

Logical Operator: AND OR

No information has been entered

Select AND to cause all selected conditions to be ANDed together when analyzing the Network statistics layer. Select OR to cause the selected conditions to be ORed.

Address & Intersection Search

Address: _____
City: _____
State: _____
ZIP Code: _____

BTS Events Search | MTA Search | Address Search | Tickets |

BT Statistics | Site Info | Cells List | Ticket Info | Tickets |

Return to Menu

FIG. 36

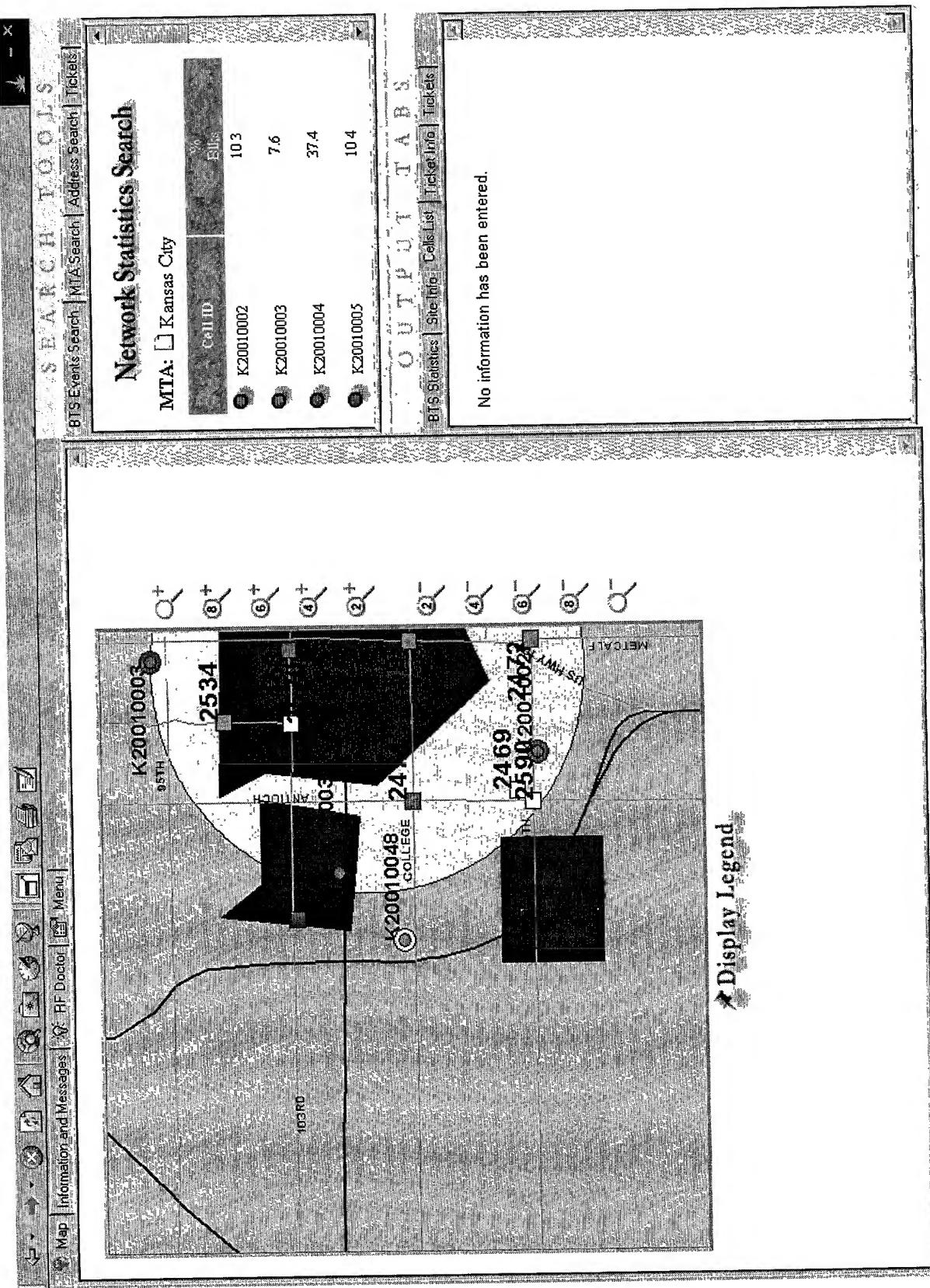


FIG. 37

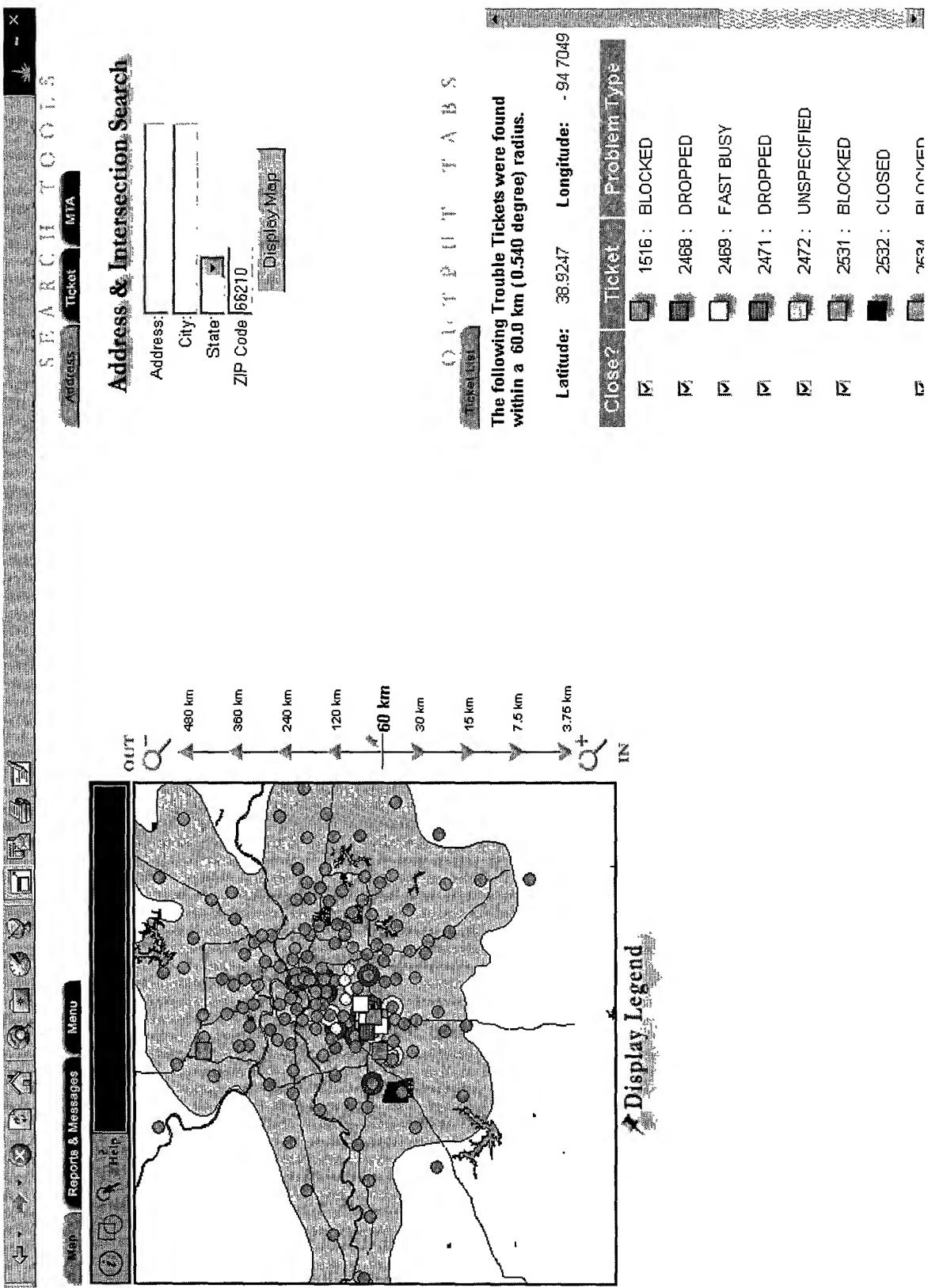


FIG. 38

FIG. 39

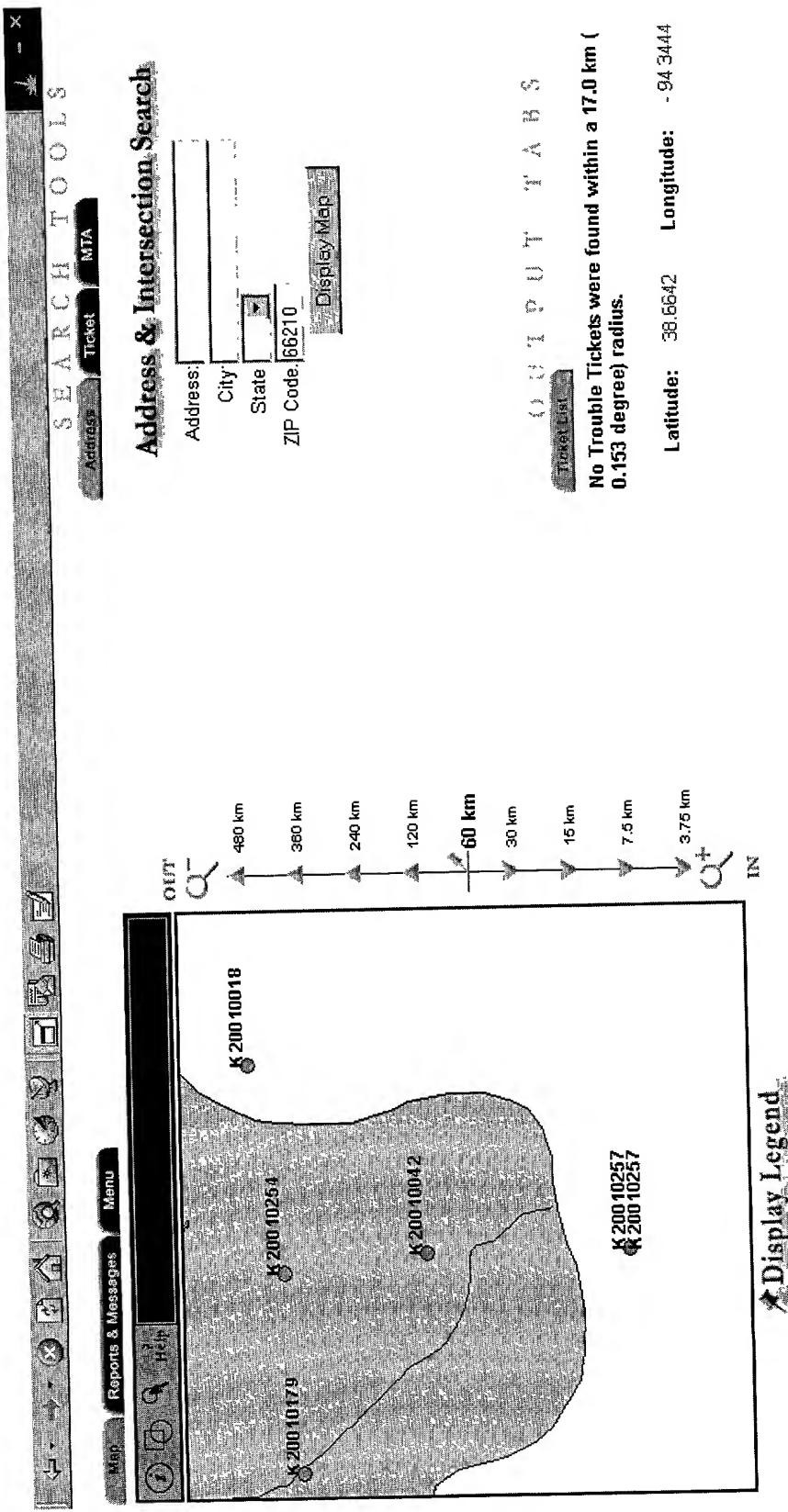
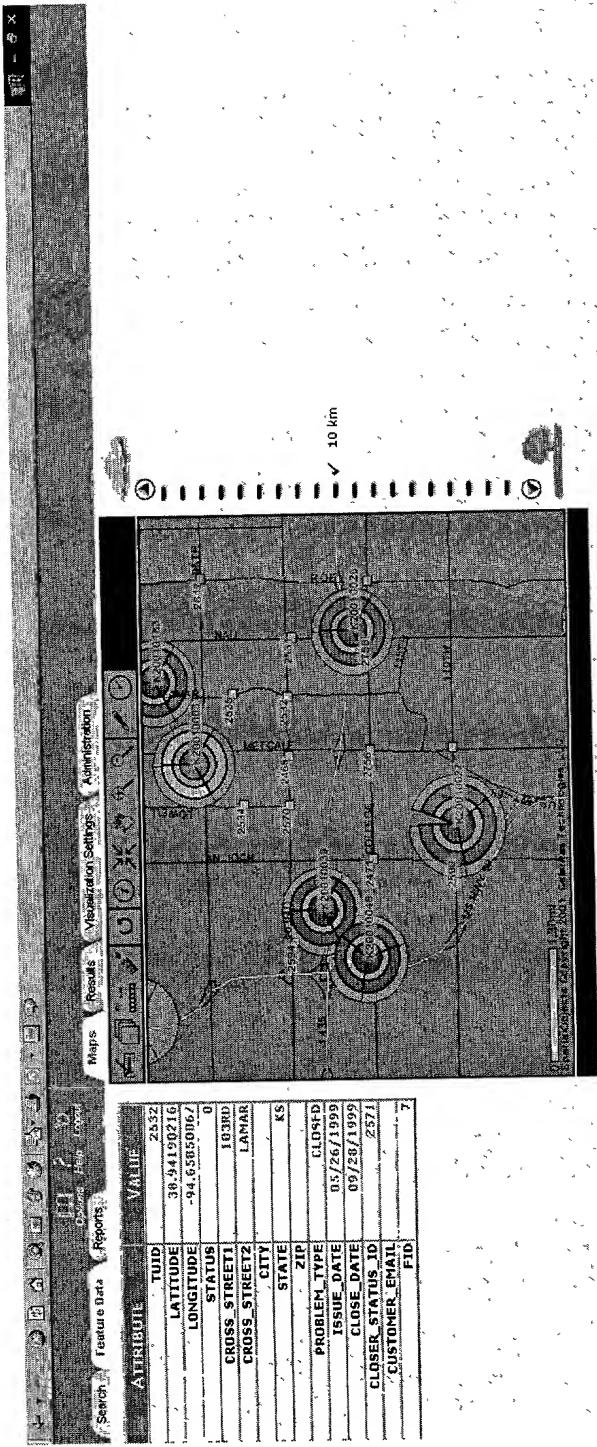


FIG. 40



Search Reports Metrics Results Virtualization Settings Administration

Address: _____

City: _____ State: _____ ZIP Code: _____

Market / MTA Search

Market/MTA: [Select an MTA]

Trading Area Search

MTA: [Select an MTA first]

Display/Map

Performance Metric Limits

Filter Type	Limit Value
% Blocking	[>= 1]
% Drains	[>= 3]
% Handoff Blocks	[>= 3]
% Handoff Drops	[>= 3]
% Minuteman Utilization	[>= 3]
% Max Channel Utilization	[>= 3]
Erlangs	[>= 3]
Max Channels Busy	[>= 3]

Call Filters

Filter Type	Limit Value
Normal	[]
Moderate	[0.21]
Excessive	[0.36]

Performance Metric Limits

Filter Type	Limit Value
% Blocking	[]
% Drains	[]
% Handoff Blocks	[]
% Handoff Drops	[]
% Minuteman Utilization	[]
% Max Channel Utilization	[]
Erlangs	[]
Max Channels Busy	[]

Toll Filters

Filter Type	Limit Value
Normal	[]
Moderate	[0.59]
Excessive	[0.89]

FREELANGS

Filter Type	Limit Value
Normal	[]
Moderate	[30]
Excessive	[42]

Filters and Performance Metrics for Toll Sectors

Busy Hour Only: Apply

Start Date: [07/01/2001] End Date: [07/28/2001]

FIG. 41

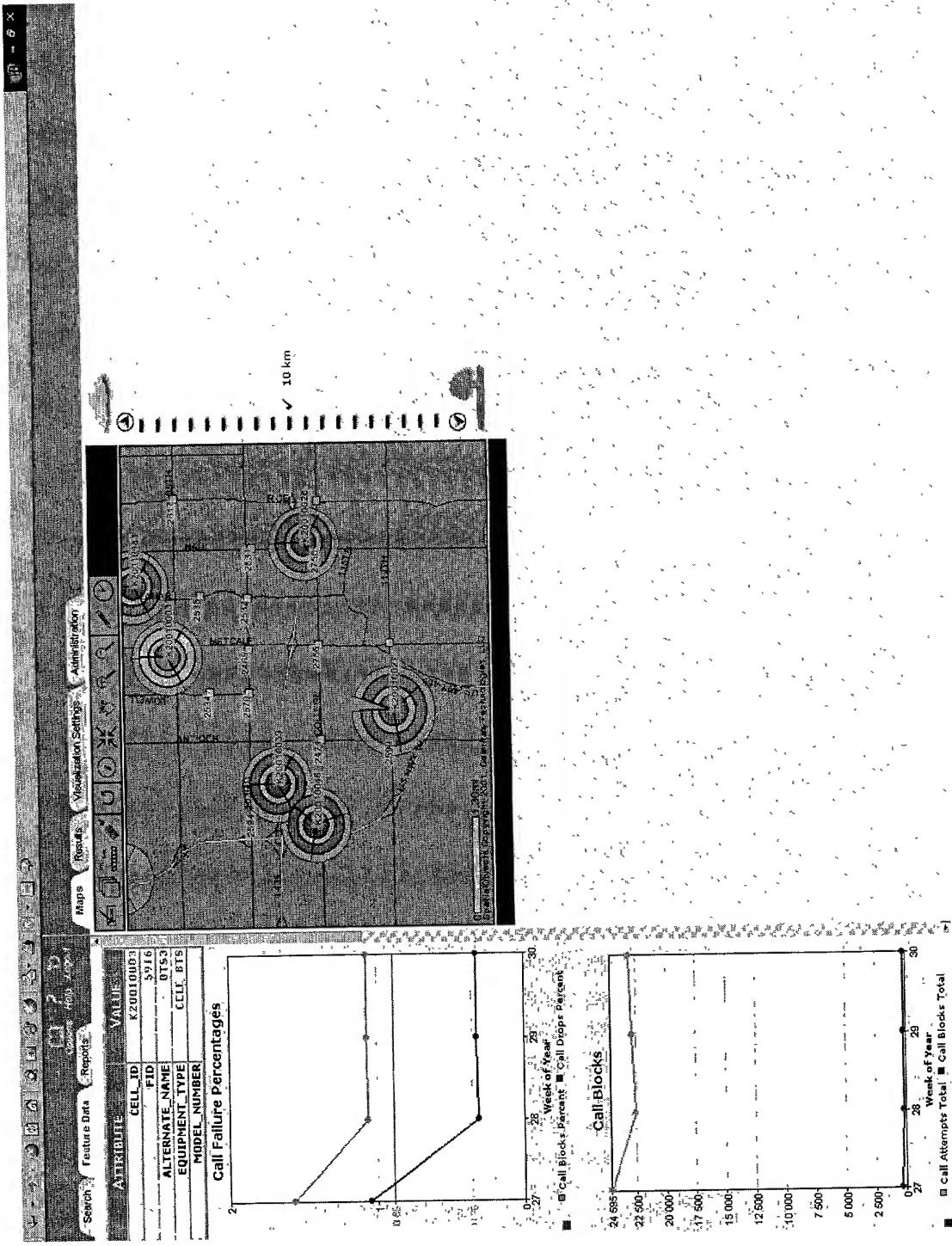


FIG. 42

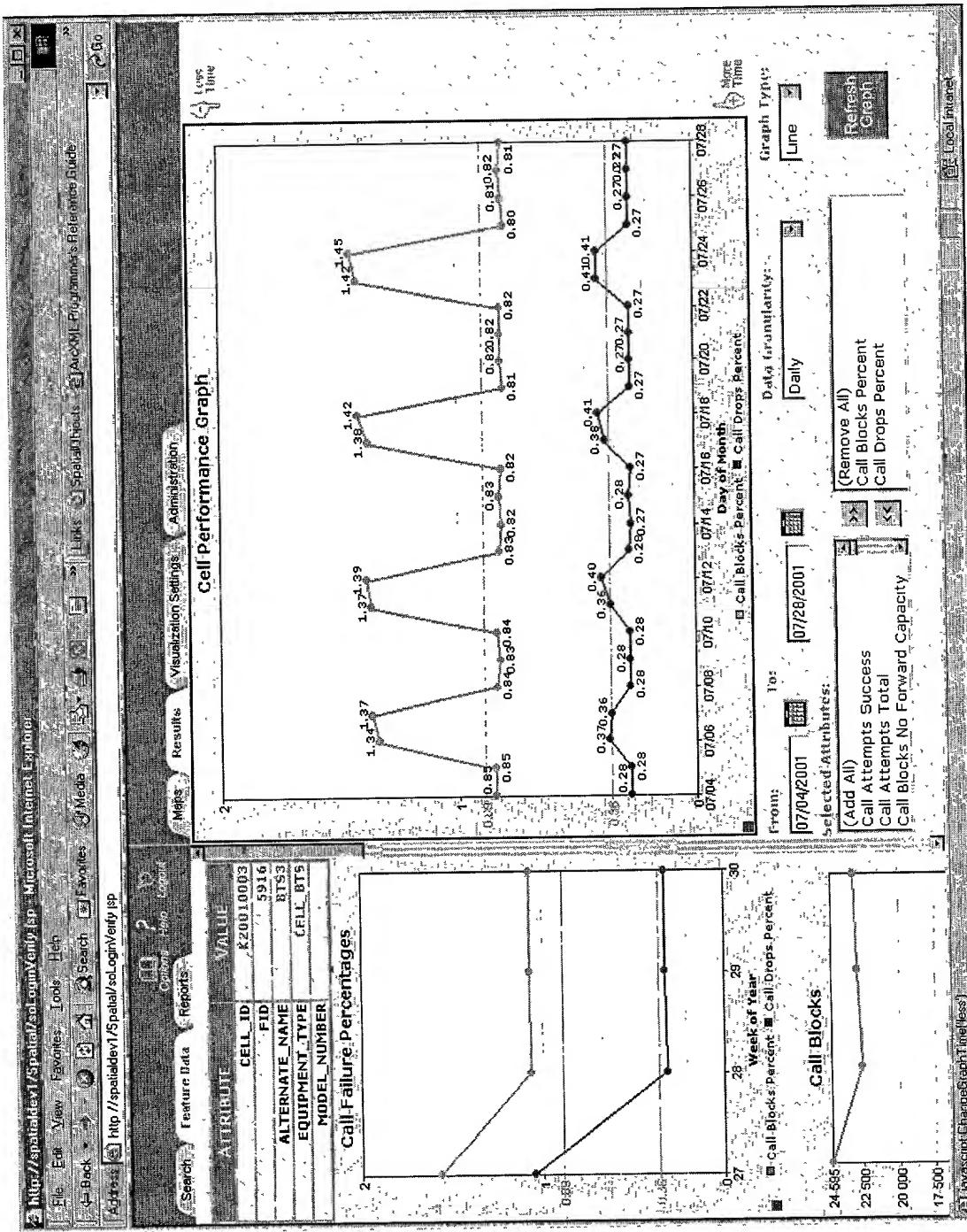
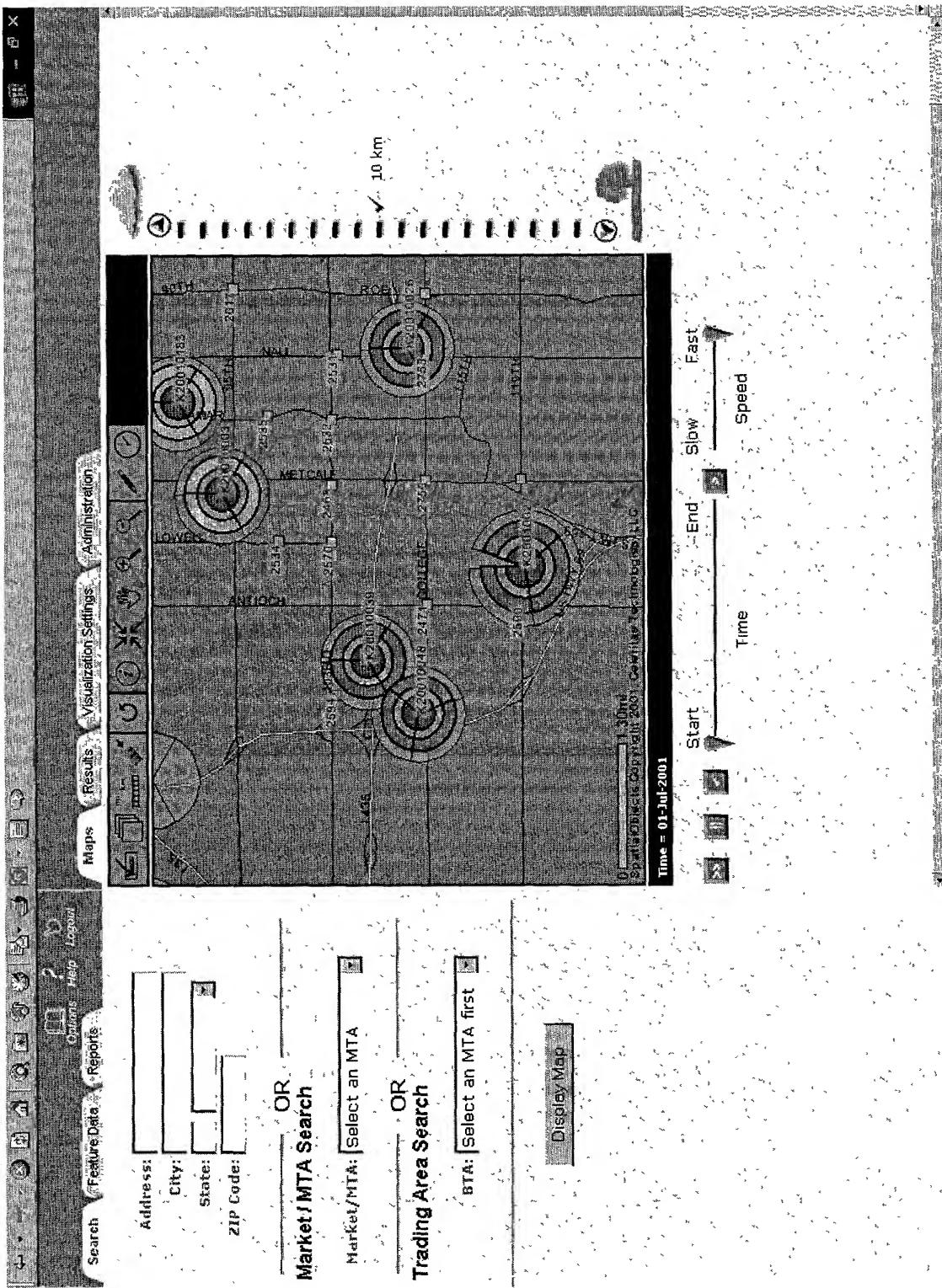


FIG. 43

Market: Kansas City										
From 07/01/2001 00:00:00 To 07/07/2001 23:59:59										
	Cell	Call Attempts	% Call Success	Total Blocks	% Call Blocks	Call Blocks	% Handoff Blocks	Handoff Blocks	% Handoff Use	Elapsed
All										
Atlanta										
Birmingham										
Boston - Providence										
Buffalo - Rochester - G										
Charlotte - Greensboro - G										
Chicago										
Cincinnati - Dayton										
Cleveland										
Columbus										
KC0010039 (KansasCity1 BTS134)	9,713	9,713	100.00%	0	0.00%	0	0.00%	0	0.00%	220,378 46
KC13XC325 (KansasCity1 BTS83)	7,866	7,866	100.00%	0	0.00%	0	0.00%	0	0.00%	215,110 56
KC0010012 (KansasCity1 BTS122)	7,772	7,772	100.00%	0	0.00%	0	0.00%	0	0.00%	154,757 63
KC0010020 (KansasCity1 BTS1125)	7,679	7,679	100.00%	0	0.00%	0	0.00%	0	0.00%	236,388 50
KC13XC328 (KansasCity1 BTS82)	7,662	7,662	100.00%	0	0.00%	0	0.00%	0	0.00%	247,907 56
KC0010065 (KansasCity1 BTS85)	7,641	7,641	100.00%	0	0.00%	0	0.00%	0	0.00%	155,040 64
KC0010096 (KansasCity1 BTS115)	7,220	7,220	100.00%	0	0.00%	0	0.00%	0	0.00%	150,681 25
KC0010068 (KansasCity1 BTS8)	6,328	6,328	100.00%	0	0.00%	0	0.00%	0	0.00%	219,322 47
KC0010117 (KansasCity1 BTS121)	6,150	6,150	100.00%	0	0.00%	0	0.00%	0	0.00%	149,566 45
KC0010215 (KansasCity1 BTS231)	5,964	5,964	100.00%	0	0.00%	0	0.00%	0	0.00%	148,193 46
Granularity:										
Weekly										
Date Range:										
From: 07/01/2001										
To: 07/07/2001										
Date range may have been adjusted to fit the selected granularity.										
Granularity:										
Report:										
Cell Top 10 Summary										
Market:										
ALL										
Atlanta										
Birmingham										
Boston - Providence										
Buffalo - Rochester - G										
Charlotte - Greensboro - G										
Chicago										
Cincinnati - Dayton										
Cleveland										
Columbus										
KC0010179 (KansasCity1 BTS136)	66,232	66,209	98.46%	2,046	3.08%	770	1.16%	1,278	0.20%	590,016 01
KC0010053 (KansasCity1 BTS83)	61,778	61,675	95.75%	1,894	2.92%	1,055	2.88%	39	0.01%	395,884 01
KC0010003 (KansasCity1 BTS3)	24,595	24,160	98.23%	642	2.61%	385	1.57%	257	0.09%	353,917 56
KC0010217 (KansasCity1 BTS301)	63,565	62,007	97.55%	1,360	2.14%	1,360	2.14%	0	0.00%	488,503 50
KC0010004 (KansasCity1 BTS4)	46,029	45,241	98.29%	700	1.52%	646	1.40%	54	0.02%	385,679 19
KC0010030 (KansasCity1 BTS5)	50,405	49,585	98.37%	677	1.34%	662	1.31%	16	0.00%	480,301 31
KC0010030 (KansasCity1 BTS132)	81,429	79,985	98.24%	1,073	1.32%	1,073	1.32%	0	0.00%	716,144 62
KC0010024 (KansasCity1 BTS127)	80,177	78,803	98.29%	1,026	1.28%	1,026	1.28%	0	0.00%	637,286 41
KC0010092 (KansasCity1 BTS110)	82,374	81,473	98.31%	1,055	1.27%	1,053	1.27%	0	0.00%	765,550 59
KC0010234 (KansasCity1 BTS35)	36,906	35,380	98.57%	467	1.27%	426	1.15%	41	0.01%	281,340 72
KC0010221 (KansasCity1 BTS126)	69,328	67,847	90.34%	1,113	1.23%	1,113	1.23%	0	0.00%	752,002 36
KC0010053 (KansasCity1 BTS53)	64,776	62,675	96.75%	1,894	2.92%	1,955	2.68%	39	0.01%	395,884 01
KC0010217 (KansasCity1 BTS301)	63,566	62,007	97.55%	1,360	2.14%	1,350	2.14%	0	0.00%	488,503 50
KC0010003 (KansasCity1 BTS3)	24,595	24,160	98.23%	642	2.61%	385	1.57%	257	0.09%	353,917 56
KC0010004 (KansasCity1 BTS4)	46,029	45,241	98.29%	700	1.52%	646	1.40%	54	0.02%	385,679 19
KC0010030 (KansasCity1 BTS132)	81,429	79,989	98.24%	1,073	1.32%	1,073	1.32%	0	0.00%	716,144 62
KC0010005 (KansasCity1 BTS5)	50,406	49,585	98.37%	677	1.34%	662	1.31%	15	0.00%	480,301 31
KC0010024 (KansasCity1 BTS127)	80,177	78,803	98.29%	1,026	1.28%	1,026	1.28%	0	0.00%	637,286 41
KC0010092 (KansasCity1 BTS110)	82,374	81,473	98.31%	1,053	1.27%	1,053	1.27%	0	0.00%	765,550 59
KC0010192 (KansasCity1 BTS140)	49,649	48,863	98.42%	624	1.26%	624	1.26%	0	0.00%	377,725 56
KC0010021 (KansasCity1 BTS126)	69,328	67,847	90.34%	1,113	1.23%	1,113	1.23%	0	0.00%	74,60
KC0010179 (KansasCity1 BTS136)	66,232	65,209	98.46%	2,046	3.09%	770	1.16%	1,278	0.20%	590,016 01
KC0010003 (KansasCity1 BTS3)	24,595	24,160	98.23%	642	2.61%	385	1.57%	257	0.09%	353,917 56
KC0010069 (KansasCity1 BTS1059)	17,673	17,608	99.63%	197	1.11%	197	1.11%	140	0.09%	306,583 55
KC0010004 (KansasCity1 BTS4)	46,029	45,241	98.29%	700	1.52%	646	1.40%	54	0.02%	385,679 19
KC0010053 (KansasCity1 BTS53)	64,778	62,575	96.75%	1,894	2.92%	1,855	2.68%	39	0.01%	395,884 01
KC0010024 (KansasCity1 BTS127)	80,177	78,803	98.29%	1,026	1.28%	1,026	1.28%	0	0.00%	637,286 41
KC0010092 (KansasCity1 BTS110)	82,374	81,473	98.31%	1,053	1.27%	1,053	1.27%	0	0.00%	765,550 59
KC0010192 (KansasCity1 BTS140)	49,649	48,863	98.42%	624	1.26%	624	1.26%	0	0.00%	377,725 56
KC0010021 (KansasCity1 BTS126)	69,328	67,847	90.34%	1,113	1.23%	1,113	1.23%	0	0.00%	74,60

FIG. 44

FIG. 45A



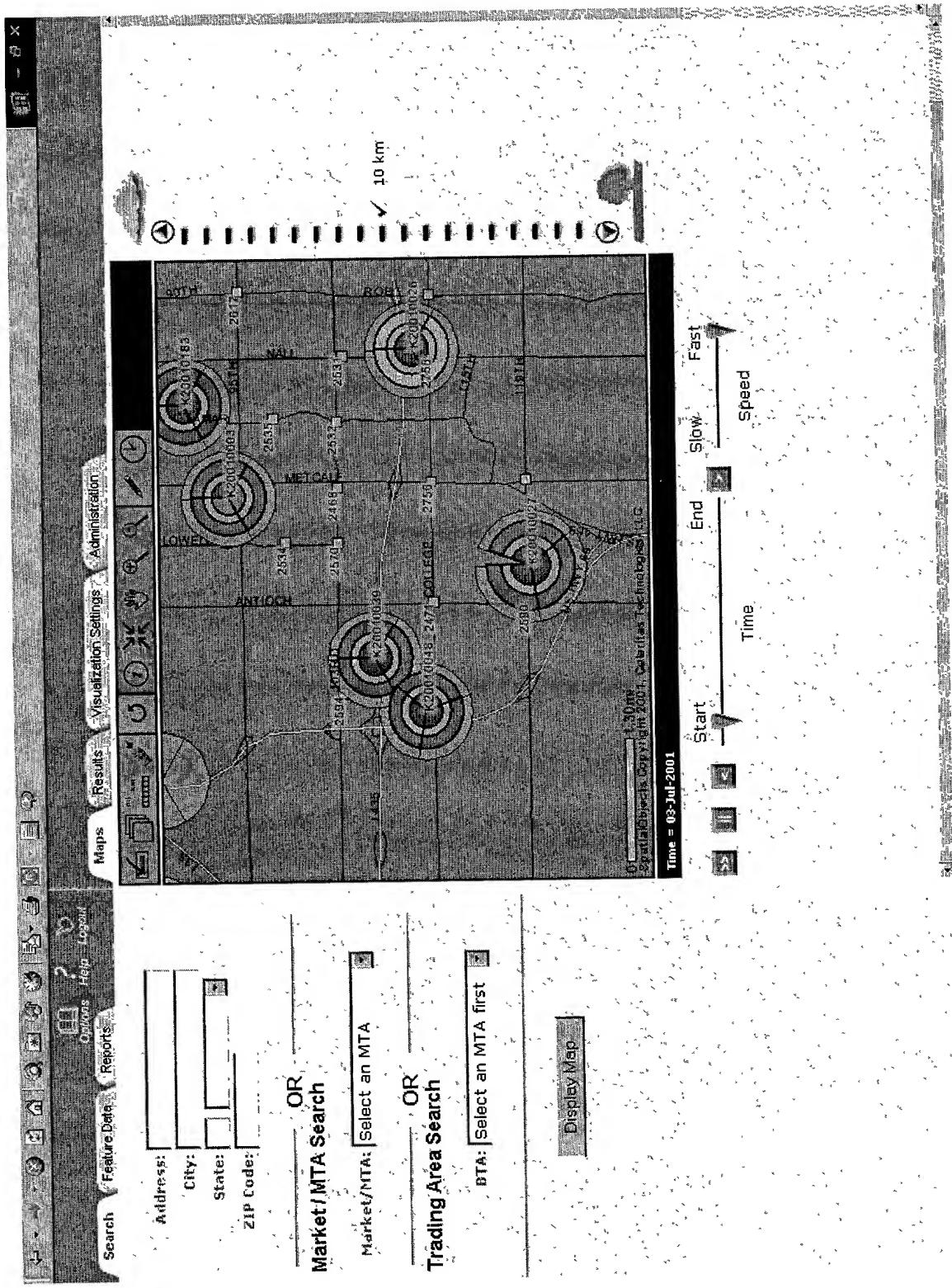


FIG. 45B